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<p>(21) International Application Number: PCT/US97/19227</p> <p>(22) International Filing Date: 27 October 1997 (27.10.97)</p> <p>(30) Priority Data:</p> <table> <tr><td>08/736,798</td><td>25 October 1996 (25.10.96)</td><td>US</td></tr> <tr><td>08/752,136</td><td>19 November 1996 (19.11.96)</td><td>US</td></tr> <tr><td>08/826,120</td><td>27 March 1997 (27.03.97)</td><td>US</td></tr> <tr><td>08/854,877</td><td>12 May 1997 (12.05.97)</td><td>US</td></tr> <tr><td>08/871,815</td><td>9 June 1997 (09.06.97)</td><td>US</td></tr> <tr><td>08/936,375</td><td>24 September 1997 (24.09.97)</td><td>US</td></tr> </table> <p>(71) Applicant (for all designated States except US): IPF, INC. [US/US]; 10 Waldon Road, Darien, CT 06820 (US).</p> <p>(72) Inventor; and</p> <p>(75) Inventor/Applicant (for US only): PERKOWSKI, Thomas, J. [US/US]; 10 Waldon Road, Darien, CT 06820 (US).</p> <p>(74) Common Representative: PERKOWSKI, Thomas, J.; Thomas J. Perkowski, Esq. PC, Soundview Plaza, 6th floor, 1266 East Main Street, Stamford, CT 06902 (US).</p>		08/736,798	25 October 1996 (25.10.96)	US	08/752,136	19 November 1996 (19.11.96)	US	08/826,120	27 March 1997 (27.03.97)	US	08/854,877	12 May 1997 (12.05.97)	US	08/871,815	9 June 1997 (09.06.97)	US	08/936,375	24 September 1997 (24.09.97)	US	<p>(81) Designated States: AL, AM, AT, AU, AZ, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, HU, IS, JP, KE, KG, KP, KR, KZ, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, TJ, TM, TR, TT, UA, UG, US, UZ, VN, ARIPO patent (GH, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</p>	
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<p>(54) Title: SYSTEM AND METHOD FOR MANAGING AND SERVING CONSUMER PRODUCT RELATED INFORMATION OVER THE INTERNET</p> <p>(57) Abstract</p> <p>A system and method for finding and serving consumer product-related information over the Internet (10) to consumers. The system includes Internet Information servers (33) which store information pertaining to Universal Product Number (e.g. UPC number) preassigned to each consumer product registered with the system, along with a list of Uniform Resource Locators (URLs) that point to the location of one or more information resources on the Internet, e.g. World Wide Web-sites, which are related to such registered consumer products. Upon entering the UPC number into the system using a conventional Internet browser program (13), the menu of URLs associated with the entered UPC number is automatically displayed for user selection. The displayed menu of URLs are categorically arranged according to specific types of product information.</p>																					
<p style="text-align: center;"><b>UPC REQUEST™ CONSUMER PRODUCT INFORMATION FINDING SYSTEM</b></p>																					

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SYSTEM AND METHOD FOR MANAGING AND SERVING  
CONSUMER PRODUCT RELATED INFORMATION  
OVER THE INTERNET

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BACKGROUND OF INVENTION

Technical Field

10        The present invention generally relates to a novel system and method for collecting consumer-product related information and transmitting and delivering the same along the consumer-product supply and demand chain using the National Information Infrastructure (e.g. the Internet), and more particularly to a novel system and method 15 for delivering consumer product related information to consumers within retail environments using Internet-based information servers and sales agents.

Brief Description of the Prior Art

20        Dissemination of consumer-product information between manufacturers and their retail trading partners must be accurate and timely. The traditional methods of phone calls and faxes are time consuming and resource intensive. An electronic Universal Product Code (UPC) Catalog (i.e. database system), accessible 24 hours a day, is a 25 solution. In 1988, QuickResponse Services (QRS), Inc. Of Richmond, California, introduced the first independent product information database, using the retail industry standard UPC numbering system. Today the QRSolutions™ Catalog contains information on over 52 million products from over 1500 manufacturers. The QRSolutions Catalog is a 30 Window's-based application providing a critical information flow link

between the retailers and the manufacturers along the supply and demand chain.

After assigning a UPC number to each item, the manufacturer organizes and sends the data, via an electronic data interchange (i.e. 5 EDI) transmission, or a tape, to QRS, Inc. to be loaded into the UPC Catalog database. Changes to the data can be made on a daily basis. Retailers with access to a manufacturer's data can view and download the data once it has been added or updated. Automatic update capabilities ensure the most recent UPC data will be in the EDI mailbox 10 of each retailer customer quickly.

The effect of a centralized database such as QRS's UPC Catalog improves the flow of merchandise from the manufacturer to the retailer's selling floor and ultimately to the consumer. With the UPC Catalog, accurate, up-to-date product information is available when the 15 retailer needs it, eliminating weeks from the order cycle time.

In addition to the electronic UPC-based product information subsystem (i.e. UPC Catalog) described above, a number of other information subsystems have been developed for the purpose of providing solutions to problems relating to electronic commerce (EC) 20 merchandising and logistics within the global supply chain. Such ancillary information subsystems include, for example: Sales and Analysis and Forecasting Subsystems for producing and providing retailers with information about what products consumers are buying; Collaborative Replenishment Subsystems for determining what products 25 retailer can be buying in order to satisfy consumer demand at any given point of time; and Transportation and Logistics Information Subsystems for producing and providing retailers with information about when products purchased by them (at wholesale) will be delivered to the

their stores. Typically, such information subsystems are connected to various value added information networks in order to efficiently offer such information services to retailers on a global basis.

While the above-described information systems collectively 5 cooperate to optimize the process of moving raw materials into finished products and into the hands of consumers, such information systems simply fail to address the information needs of the consumers of retail products who either require or desire product-related information prior to as well as after the purchase of consumer-products.

10 Presently, an enormous amount of time, money and effort is being expended by companies in order to advertise and sell their products and services, and after product purchase has taken place, to provide product related information, product warranty service and the like. For decades, various types of media have been used to realize such 15 fundamental business functions.

In recent times, there has been a number of significant developments in connection with the global information network called the "Internet", which has greatly influenced many companies to create multi-media Internet Web-sites in order to advertise, sell and maintain 20 their products and services. Examples of such developments include, for example: the World Wide Web (WWW) based on the Hypertext Markup Language (HTML) and the Hypertext Transmission Protocol (HTTP) by Tim Berners-Lee, et al.; easy to use GUI-based Internet navigation tools, such as the Netscape® browser from Netscape Communications, Inc., the 25 Internet Explorer™ browser from MicroSoft Corporation and the Mosaic™ browser from Spyglass Corporation; and the Virtual Reality Modelling Language (VRML) by Mark Pecse. Such developments in recent times have made it very easy for businesses to create 2-D Hypermedia-based

Home Pages and 3-D VR Worlds (i.e. 3-D Web-sites) for the purpose of projecting a desired "corporate image" and providing a backdrop for financial investment solicitation as well as product advertising, sales and maintenance operations.

5 Presently, a person desiring to acquire information about any particular product has a number of available search options. In particular, he or she may attempt to directly contact the manufacturer, wholesaler or reseller by telephone, US mail, e-mail, or through the company's World Wide Web-site (WWW), if they have one. In the  
10 event one decides to acquire product information through the seller's WWW site, he or she must first determine the location of its WWW site (i.e. Internet address) which oftentimes can involve using Internet Search engines such as Yahoo®, AltaVista™, WebCrawler™, Lycos™, Excite™, or the like. This can be a very time consuming process and  
15 sometimes leads to a dead end. Once the Internet address is obtained, one must then review the home page of the company's Web-site in order to find where, if at all, information about a particular product resides on the Website. This search process can be both time consuming and expensive (in terms of Internet time) and may not turn  
20 up desired information on the product of interest.

In some instances, product brochures bear a preprinted Internet address designed to direct or point prospective customers to a particular Web-site where more detailed product information can be found. A recent example of this "preprinted Web Address" pointing technique is  
25 the 1996 product brochure published by the Sony Corporation for its Sony® PCV-70 Personal Computer, which refers prospective customers to the Sony Web Address "<http://www.sony.com/pc>". While this approach provides a direct way of finding product related information

on the Internet, it is not without its shortcomings and drawbacks.

In particular, when a company improves, changes or modifies an existing Web-site which publishes product and/or service advertisements and related information, it is difficult (if not impossible) 5 not to change the Internet locations (e.g. Web addresses) at which such product and/or service advertisements and related information appear. Whenever a company decides or is forced to change any of its advertising, marketing and/or public relations firms, there is a substantial likelihood that new Web-sites will be created and launched 10 for particular products and services, and that the Web addresses of such new Web-sites will no longer correspond with the Web addresses on preprinted product brochures in currently circulation at the time. This can result in pointing a consumer to erroneous or vacant Web-sites, that present either old or otherwise outdated product and/or service 15 information, possibly adversely influencing the consumers purchasing decision.

Moreover, when a company launches a new Web-site as part of a new advertising and marketing campaign for a particular product, any preprinted advertising or marketing material relating to such products 20 will not reflect the new Web-site addresses which the campaign is attempting to get consumers to visit. This fact about preprinted advertising media renders it difficult to unify new and old advertising media currently in circulation into an advertising and marketing campaign having a coherent theme. In short, the inherently static 25 nature of the "preprinted Web address" pointing technique described above is wholly incapable of adjusting to the dynamic needs of advertising, marketing and public relations firms alike.

In addition to the above-described techniques, I-World by

Mecklermedia has recently launched a commercial product finding database on the Internet called "Internet Shopper". Notably, the "Internet Shopper" database is organized by specific types of product categories covering computer and telecommunication related technologies. While this product information finding service may be of help to those looking to buy computer or communication equipment, it fails to provide an easy way to find information on previously purchased products, or on products outside of the field of communication or computer technology. Consequently, the value of this prior art technique is limited to those considering the purchase of products catalogued within the taxonomy of the "Internet Shopper" directory.

In view of the inherent limitations of I-World's "Internet Shopper" and other product finding directories on the Internet, such as "NetBuyer" by Computer Shopper (at "<http://www.netbuyer.com>"), the National Information Infrastructure Testbed (NIIT) organization has recently formed a "confidential committee of NIIT members" under the title "Universal Product and Service Code Project". The stated problem addressed by this Project is how to locate specific goods and services on the Internet, and compare prices and other critical market information. As publicized in a NIIT Project Abstract, the "Universal Product and Service Code Project seeks to make it easier to electronically locate goods and services on the Internet using universal product and services identifiers and locators. As stated in the Project Abstract, the "NIIT believes that changing the way in which Internet information is organized is fundamental to solving this problem. In the Universal Product and Service Code Project, NIIT members are currently exploring how coding structures can help organize information about products

accessible using the Internet. NIIT's goal is to inform the development of formalized coding standards that can be used nationally and internationally so that users can locate good and services through simple searching and browsing methods. In turn, more advanced 5 features, such as comparison shopping, can be added as "intelligent agent" software programs are refined to enable users to search and retrieve products linked to these structures."

While the NIIT's Universal Product and Service Code Project seeks ways of locating specific goods and services on the Internet, all 10 proposals therefor recommend the development of formalized coding standards and searching and browsing methods which are expensive and difficult to develop and implement on a world-wide basis. Moreover, such sought after methods will be virtually useless to consumers who have already purchased products and now seek product 15 related information on the Internet.

In summary, prior art "demand chain management systems have provided: (i) procurement services consisting of UPC Catalogs accessible through the Internet and EDI networks; (ii) inventory management services consisting of replenishment, sales analysis and forecasting 20 services; and (iii) distribution management services consisting of EDI and logistics management services. However, prior art "demand chain management systems have fail to address the information needs of the consumers of retail products who either require or desire product-related information prior to as well as after the purchase of consumer- 25 products. Consequently, prior art demand chain management systems operate in an open-loop mode with a "break" in information flow cycle, disabling the manufacturers from communicating with the consumers in an efficient manner to satisfy consumer needs.

Thus, it is clear that there is great need in the art for an improved system and method for collecting product related information and transmitting and delivering the same between the manufacturers and retailers of products to the consumers thereof in various environments, 5 while avoiding the shortcomings and drawbacks of prior art systems and methodologies.

#### DISCLOSURE OF THE INVENTION

10 Accordingly, a primary object of the present invention is to provide a novel method and apparatus for collecting product-related information and transmitting and delivering the same between the manufacturers and retailers of products to the consumers thereof in retail shopping environments as well as at home, work and on the road, 15 while overcoming the shortcomings and drawbacks of prior art systems and methodologies.

Another object of the present invention is to provide such apparatus in the form of novel consumer-product information collection, transmission and delivery system.

20 Another object of the present invention is to provide such a system with an Internet-based product information database subsystem which, for each commercially available consumer-product, stores number of information elements including: the name of the manufacturer; the Universal Product Code (UPC) assigned to the product 25 by the manufacturer; one or more URLs specifying the location of information resources (e.g. Web-pages) on the Internet relating to the UPC-labelled consumer-product; and the like.

Another object of the present invention is to provide such a

system, in which the URLs stored in the Internet-based product information database are categorically arranged and displayed according to specific types of product information (e.g., product specifications and operation manuals; product wholesalers and retailers; 5 product advertisements and promotions; product endorsements; product updates and reviews; product warranty/servicing; related or complementary products; product incentives including rebates, discounts and/or coupons; etc.) that relates to the kind of information required, desired or otherwise sought by consumers, wholesalers, 10 retailers and/or trading partners; product price at which the product is being offered for sale by a particular retailer; and the like.

Another object of the present invention is to provide such a system, wherein the information maintained within the Internet-based product information database management subsystem provides a 15 manufacturer-defined consumer-product directory that can be used by various persons along the retail supply and demand chain.

Another object of the present invention is to provide such a system, wherein the manufacturers of consumer-products are linked to the retailers thereof in the middle of the supply and demand chain by 20 allowing either trading partner to access consumer-product information from the Internet-based product information database virtually 24 hours a day, seven days a week.

Another object of the present invention is to provide such a system, wherein consumer-product manufacturers, their advertisers, 25 distributors and retailers are linked to the consumers of such products at the end of the supply and demand chain, by allowing such parties access consumer-product information from the Internet-based product information database subsystem virtually 24 hours a day, seven days a

week.

Another object of the present invention is to provide such a system and method of using the same, which will accelerate the acceptance of electronic commerce on the Internet and the development 5 of the electronic marketplace, which can be used by consumers and small and large businesses alike.

Another object of the present invention is to provide a novel system and method for finding and serving consumer-product related information on the Internet.

10 Another object of the present invention is to provide such a system and method, wherein virtually any type of product can be registered with the system by symbolically linking or relating (i) its preassigned Universal Product Number (e.g. UPC or EAN number) or at least the Manufacture Identification Number (MIN) portion thereof with 15 (ii) the Uniform Resource Locators (URLs) of one or more information resources on the Internet (e.g. the home page of the manufacturer's Web-site) related to such products.

Another object of the present invention is to provide such a system and method, wherein a Web-based document transport 20 subsystem is provided for use by manufacturers as well as their advertisers and agents in registering the UPNs (e.g. UPC numbers) of their products and the URLs of the information resources related to such products.

Another object of the present invention is to provide such a 25 system with an number of different modes of operation, namely: a Manufacturer/Product Registration Mode, wherein manufacturers can register their companies and consumer products (e.g. UPC numbers and URLs) with the system; an UPN-Directed Information Access Mode,

wherein consumers can access and display information menus containing UPC numbers linked to URLs pointing Web pages containing consumer product related information by scanning the UPC label on the consumer product or by entering the UPC number thereof into a data-  
5 entry screen displayed by the system in this mode; a Manufacturer Website Search Mode, wherein the home page of a manufacturer's Website can be automatically accessed and displayed by scanning the UPC label on any consumer product of the manufacturer or by entering the UPC number thereof into a data-entry screen displayed by the system  
10 in this mode; a Trademark-Directed Search Mode enabling consumers to use trademarks and/or tradenames associated with consumer products to search for consumer-product related information registered within the system; and a Product-Description Directed Search Mode enabling consumers to use product descriptors associated with particular  
15 consumer products to search for consumer-product related information registered within the system.

Another object of the present invention is to provide such a system, wherein when the system is in its UPN-Directed Information Menu Access Mode, a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's UPN into the Internet browser manually or by bar code symbol scanning.

25 Another object of the present invention is to provide such a system, wherein when the system is in its Trademark-Directed Search Mode, a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product

registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's trademark(s) and/or associated company name into the Internet browser.

5 Another object of the present invention is to provide such a system, wherein when the system is in its Product-Description-Directed Search Mode, a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the 10 Internet and displayed from the Internet browser by simply entering the registered product's product description into the Internet browser.

Another object of the present invention is to provide such a system, wherein a predesignated information resource pertaining to any commercial product having been assigned a Universal Product Number (UPN) can be accessed from the Internet and displayed from the Internet browser by simply selecting its and then entering the UPN numeric string into an Input Box which pops up on an HTML form displayed by an Internet browser.

Another object of the present invention is to provide such a 20 system in which a relational database, referred to as "an Internet Product Directory (IPD)," is realized on one or more data-synchronized IPD Servers for the purpose of registering product related information, namely: (i) information representative of commercial product descriptions, the trademarks used in connection therewith, the company 25 names providing and/or promoting such products, the E-mail addresses of such companies, and the corresponding URLs on the Internet specifying current (i.e. up-to-date) Internet Web-site locations providing product-related information customized to such products.

Another object of the present invention is to provide such a product information finding and serving system, wherein the URLs symbolically linked to each registered product in the IPD Servers thereof are categorized as relating primarily to Product Advertisements,

5 Product Specifications, Product Updates, Product Distributors, Product Warranty/Servicing, and/or Product Incentives (e.g. rebates, discounts and/or coupons), and that such URL categories are graphically displayed to the requester by way of easy-to-read display screens during URL selection and Web-site connection.

10 A further object of the present invention is to provide a Internet-based System wherein: (1) manufacturers and their agents are enabled to simply link (i.e. relate), manage and update within a centralized database, the UPC (and/or UPC/EAN) numbers on their products and the Uniform Resource Locators (URLs) of HTTP-encoded document (i.e. Web 15 pages) containing particular kinds of consumer product-related information published on the Internet by the manufacturers, their agents and/or third parties; and (2) consumers, in retail stores, at home, in the office and on the road, are enabled to simply access such consumer product-related information using such UPC (and/or 20 UPC/EAN) numbers and/or by scanning UPC (or UPC/EAN) bar code symbols encoded with such product identification numbers.

Another object of the present invention is to provide a novel method of carrying out electronic-type commercial transactions involving the purchase of products which are advertised on the Internet 25 at uniform resource locations (URLs) that are registered with the IPI system of the present invention.

Another object of the present invention is to provide a novel system and method of finding the UPN or USN associated with any

particular registered product, respectively, by simply selecting a GUI button on the Internet browser display screen in order to enter a "Trademark-Directed Search Mode", whereby (i) a dialogue box is displayed on the display screen requesting any known trademarks 5 associated with the product, and/or the name of the company that makes, sells or distributes the particular product, and (ii) the corresponding UPN (i.e. UPC number or EAN number) registered with the IPD Servers is displayed to the user for acceptance, whereupon the Internet Uniform Resource Locators (URLs) are automatically accessed 10 from the IPD Servers and displayed on the display screen of the Internet browser for subsequent URL selection and Web-site connection.

Another object of the present invention is to provide such a system and method, wherein during the Trademark-Directed Search Mode, the UPN (e.g. UPC or EAN number) associated with any registered 15 product can be found within the database of the IPD Server using any trademark(s) and/or the company name commonly associated with the product.

Another object of the present invention is to provide a novel system and method for serving consumer-product related information 20 to Internet users in retail shopping environments (e.g. departments stores, supermarkets, superstores, home-centers and the like) as well as at home, work or on the road.

Another object of the present invention is to provide a consumer product information access terminal located at a point-of-sale (POS) 25 station, wherein the bar code symbol reader integrated with the POS station can be used to read the UPC numbers on consumer products being offered for sale in the store in order to access consumer product related information from hyper-linked Web-sites on the Internet, for

display on an LCD screen located at the POS station and viewable from various viewing positions by the sales clerk as well as consumer shoppers.

Another object of the present invention is to provide a system and 5 method, wherein one or more computer-based kiosks are installed within retail shopping environments and each such kiosk has an automatic bar code symbol reader for reading the UPC numbers on consumer products being offered for sale in the store, and also a LCD touch-type display screen for displaying product-related information 10 accessed from hyper-linked Web-sites on the Internet.

Another object of the present invention is to provide such a system and method, wherein one or more computer-based kiosks are installed within retail shopping environments and each such kiosk has an automatic bar code symbol reader for reading the UPC numbers on consumer products being offered for sale in the store, and also a LCD touch-type display screen for displaying product-related information 15 accessed from hyper-linked Web-sites on the Internet.

Another object of the present invention is to provide such a consumer product information kiosk, wherein the laser scanning bar 20 code symbol reader can be easily removed from its support stand to scan large consumer products that might difficult to present within the scanning field while the bar code symbol reader is supported above the LCD display panel.

Another object of the present invention is to provide such a consumer product information kiosk, wherein the laser scanning bar 25 code symbol reader has a cordless interface with the kiosk so that it may be moved about within a retail store in a portable manner to scan UPC labels and access consumer product related information.

Another object of the present invention is to provide a consumer product information kiosk for use with the system hereof, that is completely transportable within the store by hand, or may be mounted upon a shopping cart or other vehicle for the convenience of shoppers 5 and the like.

Another object of the present invention is to provide "virtual" or "Cyber" sales and service agents within retail shopping environments by installing the computer-based kiosks of the present invention therein.

Another object of the present invention is to provide a Web-based 10 information delivery system and method, wherein the computer-based kiosks employed therein throughout the hosting retailer's store are capable of displaying the price of products offered for sale in the store upon reading the UPC bar code symbol thereon.

Another object of the present invention is to provide a novel 15 method of constructing a relational database for use within the product information finding and serving subsystem of the present invention.

Another method of the present invention is to provide such a method of database construction, wherein the relational database is initially "seeded" with: (i) the Manufacturer Base UPC Numbers based on 20 the six digit UPC Manufacturer Identification Numbers (MIN) assigned to the manufacturers by the UCC and incorporated into the first six characters of each UPC number applied to the products thereof; and (ii) the URLs of the Web-site home pages of such manufacturers.

Another method of the present invention is to provide such a 25 method of database construction, wherein the "seeded" relational database is then subsequently extended and refined with the participation of each registered manufacturer (and/or agents thereof) by adding to the "seeded" database (iii) the 12 digit UPC numbers

assigned to each product sold thereby and the menu of URLs symbolically linked to each such corresponding product.

Another object of the present invention is to provide such a system and method, in which Web-site-based advertising campaigns 5 can be changed, modified and/or transformed in virtually any way imaginable by simply restructuring the symbolic links between the products and/or services in the campaign using current (i.e. up-to-date) Web-site addresses at which Web-site advertisements and information sources related thereto are located on the Internet.

10 Another object of the present invention is to provide a novel system and method of automatically soliciting companies to register their products within the databases of such IPD Servers in order that product related information of a multimedia nature (e.g. Web-sites), once registered therewith, can be easily found on the Internet by 15 anyone using the system and method of the present invention.

Another object of the present invention is to provide a novel system and method for finding and serving consumer-product related information on the Internet, accessible from the Websites of each manufacturer who has registered its UPN/URLs with the system's 20 "central" IPD Database.

Another object of the present invention is to provide such a system and method, wherein as part of the consumer product registration process, the manufacturer (or retailer) maintains a limited-version of UPN/URL database which contains a list of catorogized URLs 25 for each UPC-encoded product that it sells.

Another object of the present invention is to provide such a system and method, wherein the consumer product related information links contained within the limited-version of the UPN/URL Database of

each registered manufacturer (or retailer) can accessed from the manufacturer's (or retailer's) company Website and served to consumers requesting such information by way of UPC (or EAN) number entry.

5 Another object of the present invention is to provide such a system and method, wherein input HTML forms for searching the limited-version of the UPN/URL Database of each registered manufacturer (or retailer) can accessed by selecting a predesignated Check Button on the GUI to a Website providing access thereto.

10 Another object of the present invention is to provide such a system and method, wherein the limited-version of the UPN/URL Database of each registered manufacturer (or retailer) is used to update a "central" or "master" UPN/URL Database which is continuously maintained and made accessible to consumers (i) through Web-based  
15 kiosks installed in licensed retail environments and (ii) through Internet-enabled client subsystems located at home, work and in school.

Another object of the present invention is to provide such a system and method, wherein at the time of registering each manufacturer (or retailer) with the system, an Internet-based  
20 registration server automatically transmits a computer program to the manufacturer's (or retailer's) computer system for use in constructing and maintaining the limited-version UPN/URL Database related to the manufacturer's (retailer's) products.

Another object of the present invention is to provide such a system and method, wherein the limited-version UPN/URL Database of each registered manufacturer (or retailer) can be served from the manufacturer's (or retailer's) Internet information server using a Common Gateway Interface program (CGI).

Another object of the present invention is to provide such a system and method, wherein the limited-version UPN/URL database of each registered manufacturer (or retailer) is realized using a cross-platform compatible, relational database management system (RDBMS).

5 These and other objects of the present invention will become apparent hereinafter and in the Claims to Invention

#### BRIEF DESCRIPTION OF THE DRAWINGS

10 For a more complete understanding of how to practice the Objects of the Present Invention, the following Detailed Description of the Illustrative Embodiments can be read in conjunction with the accompanying Drawings, wherein:

15 Fig. 1 is a schematic diagram illustrating the various information subsystems provided by the consumer-product information collection, transmission and delivery system of invention along the consumer-product demand chain, namely an Internet-based Product-Information (IPI) Finding and Serving Subsystem, a UPC-based Product-Information Subsystem ("UPC Catalog"), an Electronic Trading Information Subsystem, a Sales Analysis and Forecasting Information Subsystem, Collaborative Replenishment Information Subsystem, and a Transportation and Logistics Information Subsystem;

20 Fig. 2 is a schematic diagram of an illustrative embodiment of the consumer-product information collection, transmission and delivery system of the present invention shown embedded with the infrastructure of the global computer communications network known as the "Internet", and comprising a plurality of data-synchronized Internet Product Directory (IPD) Servers connected to the infrastructure

of the Internet, a UPN/URL Database Subsystem (i.e. UPN/URL Database) connected to one or more of the IPD Servers and one or more globally-extensive electronic data interchange (EDI) networks, a Web-based Document Server connected to at least one of the IPD Servers and

5 the Internet infrastructure, a Web-based Document Administration Computer connected to the Web-based Document Server by way of a TCP/IP connection, a plurality of Internet Product-Information (IPI) Servers connected to the infrastructure of the Internet for serving consumer-product related information to consumers in retail stores and

10 at home, a plurality of Client Subsystems connected to the infrastructure of the Internet and allowing manufacturers to transmit consumer-product related information to the Web-based Document Server for collection and retransmission to the IPD Servers, and a plurality of Client Subsystems connected to the infrastructure of the Internet and

15 allowing consumers in retail stores and at home to request and receive consumer-product related information from the IPD Servers;

Fig. 2A is a schematic diagram illustrating the flow of information along the consumer-product supply and demand chain, including (i) the communication link extending between the information subsystems of manufacturers of UPC-encoded products and the centralized (or master) UPN/URL Database Management Subsystem 9 of the consumer-product information collection, transmission and delivery system of the present invention, (ii) the communication link extending between the UPN/URL Database Subsystem and the IPD Servers of the present invention, (iii)

20 the communication link extending between the IPD Servers and in-store Client Subsystems of retailers, (iv) the communication link extending between the IPI Servers and the in-store Client Subsystems of retailers, (v) the communication link extending between the IPD Servers and the

Client Subsystems of consumers, and (vi) the communication link extending between the IPI Servers and the Client Subsystems of consumers;

Fig. 2B is block schematic diagram of the IPD Server of the 5 illustrative embodiment, showing its subsystem components namely the relational database management subsystem (RDBMS), common gateway interface (CGI), and HTTP (httpd) server;

Fig. 3A1 is a graphical representation of a first illustrative embodiment of the client computer system of the present invention, 10 designed for use in desktop environments at home, work and play;

Fig. 3A2 is a graphical representation of a second illustrative embodiment of the client computer system of the present invention realized in the form of a bar code driven multi-media kiosk, designed for use as a "virtual sales agent" in retail shopping environments such as 15 department stores, supermarkets, superstores, retail outlets and the like;

Fig. 3A3 is a graphical representation of a third illustrative embodiment of the client computer system of the present invention realized in the form of a bar code driven multi-media kiosk, designed 20 for use as a "virtual sales agent" in retail shopping environments such as department stores, supermarkets, superstores, retail outlets and the like, and shown as having an integrated "cord-connected" type laser scanning bar code symbol reader disposed overhead its LCD touch-screen panel, a telephone handset for carrying out telephone calls, and a 25 credit card transaction terminal for conducting consumer purchase transactions and other forms of electronic commerce while using the consumer product information finding system of the present invention;

Fig. 3A3' is a graphical representation of the bar code driven

multi-media kiosk shown in Fig. 3A3, wherein the laser scanning projection-type bar code symbol reader is removed from its support stand, by pulling its connector cable out of its cable take-up unit, and used to read a bar code symbol on product located a relatively short 5 distance away from the kiosk;

Fig. 3A4 is a graphical representation of a fourth illustrative embodiment of the client computer system of the present invention realized in the form of a bar code driven multi-media kiosk, designed for use as a "virtual sales agent" in retail shopping environments such as 10 department stores, supermarkets, superstores, retail outlets and the like, and shown as having an integrated "cordless" type laser scanning bar code symbol reader disposed overhead its LCD touch-screen panel, a telephone handset for carrying out telephone calls, and a credit card transaction terminal for conducting consumer purchase transactions and 15 other forms of electronic commerce while using the consumer product information finding system of the present invention;

Fig. 3A4' is a graphical representation of the bar code driven multi-media kiosk shown in Fig. 3A4, wherein the laser scanning projection-type bar code symbol reader is removed from its support 20 stand and used to read a bar code symbol on product located a relatively short distance away from the kiosk;

Fig. 3A5 is a graphical representation of a fifth illustrative embodiment of the client computer system of the present invention realized in the form of a consumer product information access terminal, 25 designed for use as a "sales agent's tool" at a point-of-sale (POS) station in retail shopping environments, wherein the information access terminal has a bar code symbol reader integrated with the POS station for reading the UPC numbers on consumer products being offered for

sale in the store, and also a LCD screen capable of being mounted in various viewing positions for displaying consumer product-related information accessed from a centralized database interconnect to the Internet;

5 Fig. 3B is a schematic representation of an exemplary display screen produced by a (graphical user interface) GUI-based web browser program running on a client subsystem and providing an on-screen IPD Web-site Find button (e.g. UPC REQUEST™ Central Website Find button) for instantly connecting to the IPD Web-site (e.g. UPC REQUEST™ Central 10 Website) and carrying out the consumer product information finding and serving method of the present invention;

Fig. 3C is a schematic representation of an exemplary display screen produced by a GUI-based Internet browser or communication program running on a client subsystem and displaying a Netscape-style 15 browser "display framework", served from the IPD Web-site (e.g. UPC REQUEST™ Central Website), and supporting a providing a sponsor frame for sponsor advertisement, a control frame with Check-Box type buttons for activating any mode of the IPI finding and serving subsystem, and an information frame for displaying HTML documents (instructions, 20 forms, and the like) in accordance with the principles of the present invention;

Fig. 4A1 is a schematic representation of the relational-type IPI Registrant Database maintained by each IPD Server configured into the system of the illustrative embodiment of the present invention, showing 25 the information fields for storing (i) the information elements representative of the UPN (e.g. UPC data structure, EAN data structure, and/or National Drug Code (NDC) data structure), URLs, trademark(s) (TM<sub>i</sub>), Company Name (CN<sub>i</sub>) and company address, Product Description

(PD<sub>i</sub>) and E-Mail Address (EMA<sub>i</sub>) thereof symbolically-linked (i.e. related) for a number of exemplary IPI Registrants listed (i.e. registered) with the IPI Registrant Database maintained by each IPD Server;

5 Fig. 4A2 is a schematic representation of the information subfield structure of the URL Information Field of the IPI Database of Fig. 4A1, showing the Product Advertisement Information Field, the Product Specification (Description/Operation) Information Field, the Product Update Information Field, the Product Distributor/Reseller/Dealer  
10 Information Field, the Product Warranty/Servicing Information Field, the Product Incentive Information Field thereof, the Product Review Information Field, the Related Products Information Field, and Miscellaneous Information Fields detailed in greater detail hereinafter;

Fig. 4B is a schematic representation of the relational-type Non-  
15 IPI Registrant Database maintained by each IPD Server that is configured into the IPI Finding and Serving Subsystem of the illustrative embodiment of the present invention, showing the information fields for storing (i) the information elements representative of the Company Name (CN<sub>i</sub>) and Company Address, Trademark(s) (TM<sub>i</sub>) registered by  
20 the associated Company, and E-Mail Address (EMA<sub>i</sub>) thereof symbolically-linked for a number of exemplary Non-IPI registrants listed within the Non-IPI Registrant Database maintained by each IPD Server;

Fig. 4C is a schematic representation of the structure of a  
25 relational database management subsystem (RDBMS) used to carry out a best-mode embodiment of the the IPI Registrant Database represented in Figs. 4A1 and 4A2 hereof;

Fig. 4C1 is a schematic representation illustrating the information

fields of the table entitled "Manufacturer" used in the RDBMS shown in Figs. 4A1 and 4A2 hereof;

Fig. 4C2 is a schematic representation illustrating the information fields of the table entitled "Consumer Product" used in the RDBMS shown in Figs. 4A1 and 4A2 hereof;

Fig. 4C3 is a schematic representation illustrating the information fields of the table entitled "Information Resources on the WWW" used in the RDBMS shown in Figs. 4A1 and 4A2 hereof;

Fig. 4D is a schematic representation illustrating the information fields of the table entitled "Retailer" used in the RDBMS shown in Figs. 4A1 and 4A2 hereof;

Fig. 5A is a schematic diagram illustrating the high level structure of communication protocol that can be used among the client subsystem  $C_a$ , the IPD Server  $S_b$ , and the Web-based Document Server  $S_{WD}$  (30) of the IPI Finding And Serving Subsystem hereof when, from any particular client subsystem, the subsystem is engaged in Manufacturer/Product Registration Mode of operation, requesting as input a URL which automatically connects the client subsystem to the Web Document Server associated with the Manufacturer/Product Registration Subsystem of the present invention;

Fig. 5B is a schematic diagram illustrating the high level structure of a communication protocol that can be used among the client subsystem  $C_a$ , the IPD Server  $S_b$ , and the IPI Server  $S_c$  of the IPI Finding And Serving Subsystem hereof when the subsystem is in its Manufacturer Website Search Mode of operation, requesting as input a UPN (e.g. UPC or EAN) associated with a manufacturer's product, and providing as output the URL of the home page of the manufacturer's Web-site and automatically displaying the same;

Fig. 5C is a schematic diagram illustrating the high level structure of a communication protocol that can be used among the client subsystem  $C_a$ , the IPD Server  $S_b$ , and the IPI Server  $S_c$  of the IPI Finding And Serving Subsystem hereof when the subsystem is in its  
5 UPN-Directed Information Access Mode of operation, requesting as input a UPN associated with the consumer product, and providing as output the set of URL(s) registered with the consumer product identified by the UPN within the database of the system and pointing to HTTP-encoded documents containing particular types of product-related  
10 information;

Fig. 5D is a schematic diagram illustrating the high level structure of a communication protocol that can be used among the client subsystem  $C_a$ , the IPD Server  $S_b$ , and the IPI Server  $S_c$  of the IPI Finding And Serving Subsystem hereof when the subsystem is in its  
15 Trademark-Directed Search Mode of operation, requesting as input a trademark and/or company name, and providing as output the product descriptor(s) and a UPN (or set thereof) related to the trademark within the database of the system and pointing to HTTP-encoded documents containing particular types of product-related information;

20 Fig. 5E is a schematic diagram illustrating the high level structure of a communication protocol that can be used among the client subsystem  $C_a$ , the IPD Server  $S_b$ , and the IPI Server  $S_c$  of the IPI Finding And Serving Subsystem hereof when the subsystem is in its Product-Description Directed Search Mode of operation, requesting as  
25 input a product descriptor related to the consumer product on which information is sought and providing as output the trademark, company name and URL(s) related to the product descriptor within the database of the system and pointing to HTTP-encoded documents containing

particular types of product-related information;

Fig. 6A provides a high level flow chart illustrating the steps involved in carrying out the communication protocol shown in Fig. 5A when the IPI Finding and Serving Subsystem is in its

5 Manufacturer/Product Registration Mode of operation;

Fig. 6B provides a high level flow chart illustrating the steps involved in carrying out the communication protocol shown in Fig. 5B when the IPI Finding and Serving Subsystem is in its Manufacturer Website Search Mode of operation;

10 Fig. 6C provides a high level flow chart illustrating the steps involved in carrying out the communication protocol shown in Fig. 5D when the IPI Finding and Serving Subsystem is in its UPN-Directed Information Access Mode of operation;

15 Figs. 6D1 through 6D3, taken together, provides a high level flow chart illustrating the steps involved in carrying out the communication protocol shown in Fig. 5C when the IPI Finding and Serving Subsystem is in its Trademark-Directed Search Mode of operation;

20 Fig. 6E1 through 6E3, taken together, provides a high level flow chart illustrating the steps involved in carrying out the communication protocol shown in Fig. 5E when the IPI Finding and Serving Subsystem is in its Product-Description Directed Search Mode of operation;

Fig. 7 is schematic representation of an exemplary embodiment of the IPI Finding and Delivery Subsystem of the present invention showing the various constituent subsystems thereof; and

25 Fig. 8 a schematic representation of portfolio of Web-sites supported and managed by the UPN/URL database management subsystem with the assistance of the manufacturer/product registration subsystem and Web-enabled client subsystems operated by

manufacturers and/or their agents in accordance with the information management principles of the present invention.

#### BEST MODES FOR CARRYING OUT THE INVENTION

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Referring to the accompanying Drawings, like structures and elements shown throughout the figures thereof shall be indicated with like reference numerals.

#### 10 Overview Of The System Of The Present Invention

As illustrated in Fig. 1, the consumer-product information collection, transmission and delivery system of the present invention is generally indicated by reference numeral 1 and comprises an integration of information subsystems, namely: an IPI finding and serving subsystem 2 for allowing consumers to find product related information on the Internet (e.g. WWW) at particular Uniform Resource Locators (URLs), using UPC numbers and/or trademarks and tradenames symbolically-linked or related thereto; a UPC Product-Information Subsystem ("UPC Catalog") 3 for providing retailers with accurate up-to-date product information on numerous consumer-products offered for wholesale to retailers by manufacturers registering their products therewith; a Electronic Trading Information Subsystem 4 for providing trading partners (e.g. a manufacturer and a retailer) to sell and purchase consumer goods by sending and receiving documents (e.g. purchase orders, invoices, advance slip notices, etc.) to consummate purchase and sale transactions using either Value Added Network (VAN) based EDI transmission or Internet (e.g. HTTP, SMTP, etc.) based electronic document communications; a Sales Analysis and Forecasting

Information Subsystem 5 for providing retailers with information about what products consumers are currently buying at retail stores or expect to be buying in the near future; Collaborative Replenishment Information Subsystem 6 for determining what products retailers can 5 be buying in order to satisfy consumer demand at any given point in time; a Transportation and Logistics Information Subsystem 7 for providing retailers with information about when ordered products (purchased by retailers at wholesale) will be delivered to the retailer's stores; and Input/Output Port Connecting Subsystems 8 for 10 interconnecting the input and output ports of the above-identified subsystems through the infrastructure of the Internet and various value-added EDI networks of global extent. Notably, unlike prior art supply chain management systems, the consumer-product information collection, transmission and delivery system of the present invention 15 embraces the manufacturers, retailers, and consumers of UPC-encoded products, and not simply the manufacturers and retailers thereof. As will become apparent hereinafter, this important feature of the present invention allows manufacturers and retailers to deliver valuable product related information to the consumers of their products, thereby 20 increasing consumer purchases, consumer satisfaction and consumer loyalty. Prior art supply chain management systems simply have no way or means of providing such information services to the consumers of UPC-encoded products along the consumer-product supply and demand chain.

25 As shown in Fig. 2, the consumer-product information collection, transmission and delivery system illustrated in Fig. 1 is realized as an arrangement of system components, namely: a central UPN/URL Database Management Subsystem 9 for storing and serving various

types of consumer-product information to retailers, manufacturers and consumers alike (e.g., the name of the product's manufacturer; the Universal Product Code (UPC) or European Article Number (EAN) assigned to the product by the manufacturer; one or more URLs 5 specifying the location of information resources on the Internet at which particular kinds of information relating to the consumer-product can be found; merchandise classification; style number; tradename; information specifying the size, color and other relevant characteristics of the consumer-product, where applicable; ordering criteria; availability and 10 booking dates, etc.); a globally-based (packet-switched) digital telecommunications network (such as the Internet) 10 having an infrastructure including Internet Service Providers (ISPs), Network Service Providers (NSPs), routers, telecommunication lines, channels, etc., for supporting packet-switched type digital data 15 telecommunications using the TCP/IP networking protocol well known in the art; one or more Internet Product Finding Directory (IPD) Servers, each indicated by reference numeral 11 and being connected to the Internet at strategically different locations via the Internet infrastructure 10 and data-synchronized with each other in order that 20 each such Server maintains mirrored a relational-type database structure as represented in Figs. 4A and 4B; a plurality of Internet Product-Information (IPI) Servers, each indicated by reference numeral 12 and being connected to the Internet via the Internet infrastructure; a plurality of User (or Client) Computers, each indicated by reference 25 numeral 13, being connected to the Internet via the Internet infrastructure and available to consumers (C<sub>1</sub>, C<sub>2</sub>, C<sub>3</sub>,...,C<sub>i</sub>); one or more data communication (i.e. EDI) networks 14, comprising data collection nodes 15 and communication links 16, operably connected to the

centralized UPN/URL Database Management Subsystem 9, each Client Computer 13 available to a Manufacturer (M<sub>1</sub>, M<sub>2</sub>, M<sub>3</sub>..., M<sub>j</sub>) and Retailer (R<sub>1</sub>, R<sub>2</sub>, R<sub>3</sub>..., R<sub>k</sub>) within the retail supply and demand chain; a Web-based Document Server 30 connected to at least one of the IPD Servers 11 and the Internet infrastructure, for transferring documents and messages to remote Client Computer Systems during the registration of manufacturers and consumer products with the system hereof and periodically updating product-related information with the IPD Servers 11 in an automatic manner; and an Web-based Document Administration Computer 31 connected to the Web-based Document Server 30 by way of a TCP/IP connection 32, for administrating the registration of manufacturers and products with the system, initiating the transfer of consumer product related information (e.g. menu of URLs) between the remote Client Computer Systems and Web-Based Document Server 30, transferring such information to the IPD Servers 11, and maintaining local records of such information transfers and the like. As will become apparent hereinafter, Web-based Document Server 30 and Web-based Document Administration Computer 31 provide a subsystem for (i) managing the process of registering qualified manufacturers and their consumer products and related Web pages (e.g. UPC numbers and URLs), and (ii) updating the product-related information with the IPD Servers 11 in an automatic manner to ensure accurate links between UPNs and URLs within the UPN/URL Database Management Subsystem. The subsystem comprising the Web-based Document Server 30 and Web-based Document Administration Computer 31 shall be referred to as the Manufacturer/Product Registration Subsystem of the consumer product information finding and delivery subsystem 2 and indicated by reference numeral 33

throughout the figure drawings hereof.

Preferably, the centralized UPN/URL Database Management Subsystem 9 and at least one of the IPD Servers 11 are located at a secured information storage/processing center 17, along with a 5 multiprocessor (or mainframe) computer system, information servers, routers, data communication lines, disk storage devices (e.g. RAIDs), tape drives and tape-library system, uninterrupted power supplies (UPS), and other peripheral technology to provide on-line, batch and back-up operations. However, the IPI Servers, the Client Computers and 10 the other IPD Servers (if provided for database mirroring purposes), typically will be located throughout the world, as the distribution of manufacturers, retailers and consumers who are encouraged to use the system are scattered across the Planet.

In the illustrative embodiment, the Web-based Document Server 15 30 is a Windows NT Server running WebDox™ Server software from Premenos Corporation of Concord, California. The Windows NT Server can be realized using a suitable computer system having a Pentium® or higher CPU, 64 MB of RAM or higher, running (i) Microsoft Windows NT Server 4.0 or higher Operating System software from Microsoft 20 Corporation, (ii) Microsoft Internet Information Server 2.0 or higher from Microsoft Corporation, and (iii) Microsoft SQL Server 6.5 or higher software from Microsoft Corporation. Also, the WebDox™ Server is provided with a dedicated Internet connection (i.e. ISDN or better) to the Internet infrastructure 10.

25 The EDI administration computer 31 is either a Windows 95 or Windows NT Computer system running WebDox Admin™ software from Premenos Corporation of Concord, California. The Windows 95 or Windows NT computer system 31 can be realized using a suitable

computer system having an Intel 486 or higher CPU, 12 MB of RAM or higher, running Microsoft Windows 95 or Windows NT 4.0 or higher, and having a TCP/IP connection 31 to the WebDox™ Server 30.

In order to use the WebDox™ system, each remote Client Computer 5 System 13 includes either a Windows 95 or Windows NT Computer system running WebDox Remote™ software from Premenos Corporation of Concord, California. The Windows 95 or Windows NT computer system 13 can be realized using a suitable computer system having a Intel 486 or higher CPU, 16 MB of RAM or higher, and a VGA monitor or 10 better, and running (i) Microsoft Windows 95 or Windows NT 3.51 or higher Operating System (OS) software, and (ii) Microsoft Internet Explorer 3.0 or higher from Microsoft Corporation. Also, the WebDox Remote™ Server is provided with a dial-up Internet connection (i.e. 14,400 bps or better) to the Internet infrastructure. The function of 15 the Web-based Document Server 30, Web-based Administration System 31 and remote client subsystems 13 running the Premenos® WebDox Remote™ software is to provide a Web-based Document Transport System for automatically transferring information (e.g. UPN/URLs) from manufacturers to the IPD Servers of the system in order to periodically 20 update the same. While the illustrative embodiment of this Web-based Document Transport System has been described in terms of its implementation using the WebDox™ system from Premenos, it is understood that other commercially available electronic document transport systems (e.g. COMMERCE:FORMSTM Electronic Business Forms 25 Package from Sterling Commerce, Inc., <http://www.stercomm.com>) can be used to carry out this subsystem. The operation of this Web-Based Document Transport System will be described in detail hereinafter with respect to the collection and delivery of consumer product-related

information to the IPDs hereof.

The major subsystem components comprising the consumer-product information collection, transmission and delivery system of the present invention will be described in greater detail below.

5 In the illustrative embodiment of the present invention, the UPC Product-Information Subsystem 2 is realized using the UPN/URL Database Management Subsystem 9 and data communication networks 14 of the enabling technology platform shown in Fig. 2. Preferably, the product procurement services delivered by the UPN/URL Database  
10 Management Subsystem 9 are provided by modifying the prior art QRsolutions UPC Catalog currently implemented by QuickResponse Services, Inc., so that this subsystem includes the database structures (i.e. information fields and data elements) of the IPD Database Server 11 which are neither found in or suggest by the prior art QRsolutions UPC  
15 Catalog. The structure and operation of the UPN/URL Database Management Subsystem and IPD Server of the present invention will be described in greater detail hereinafter. The information services supported by the UPC Product-Information Subsystem 3 include those provided by the prior art QRsolutions UPC Catalog, and also a number of  
20 additional information services that can be used to carry out Product Registration within the IPI Finding and Serving Subsystem of the present invention. These additional information services will be described in greater detail hereinafter with reference to Fig. 2A.

The Electronic Trading Information Subsystem 4 is realized using  
25 the UPN/URL Database Management Subsystem 9, Client Computer Systems 13 and data communication networks 14 of the enabling technology platform shown in Fig. 2. Preferably, the inventory procurement services delivered by the Electronic Trading Subsystem 4

are provided by the prior art QR Solutions Econnect and Electronic Data Interchange Services currently being implemented by QuickResponse Services, Inc.

Sale Analysis and Forecasting Information Subsystem 5 is realized 5 using information storage/processing center 1, Client Computer Systems 13, and the data communication networks 14 of the enabling technology platform shown in Fig. 2. Preferably, the product inventory management services delivered by the Sale Analysis and Forecasting Information Subsystem 5 are provided by the prior art QR Solutions Sale 10 Analysis and Forecasting Information Services currently being implemented by QuickResponse Services, Inc.

The Collaborative Replenishment Information Subsystem 4 is realized using information storage/processing center 17, Client Computer Systems 13 and the data communication networks 114 of the 15 enabling technology platform shown in Fig. 2. Preferably, the product inventory management services delivered by the Collaborative Replenishment Information Subsystem 6 are provided by the prior art QR Solutions Replenishment Services currently being implemented by QuickResponse Services, Inc.

20 The Transportation and Logistics Information Subsystem 7 is realized using information storage/processing center 17, Client Computer Systems 13, and the data communication networks 14 of the enabling technology platform shown in Fig. 2. Preferably, the product distribution management services delivered by the Transportation and 25 Logistics Information Subsystem 7 are provided by the prior art QR Solutions EDI and Logistics Management Services currently being implemented by QuickResponse Services, Inc.

In the illustrative embodiment of the system of the present

invention, each Client Computer 13 has a conventional GUI-based web browser program (e.g. Netscape, Internet Explorer, Mosaic, etc.) with a plug-in type module, such as CyberFinder™ navigational software by Aladdin Systems, Inc., of Watsonville, California, that provides an on-screen graphical icon for a "IPI Web-site Find" function. An exemplary display screen 18 produced by such a GUI-based web browser program is set forth in Fig. 3B. Alternatively, the URL of the home page of the IPI Web-site can be recorded as a browser "bookmark" for easy recall and access through a conventional GUI-based Internet browser. Once at the home page of the IPI Web-site, an Internet user can find product-related information on the Internet in essentially the same way as when using the web browser program of Fig. 3B. As shown, the on-screen radio button 19 functions as an "IPI Web-site Find" Button (or Consumer Product Information Button) for instantly connecting the client subsystem to a particular IPI Web-site (i.e. hosted on each mirrored IPD Server) and especially adapted for carrying out the IPI finding and serving method of the present invention. In general, each IPI Web-site can be sponsored by a retail store subscribing to the consumer product information service hereof, or by one or manufacturers and/or service providers. The URL for the home page of any particular IPI Web-site can be selected with marketing considerations in mind, for example, "http://www.ipf.com" or "http://www.upcrequest.com" similar in form with the URLs of other information search-engines and directories currently available on the Internet. Upon selecting the IPI Web-site Find Button 19 (e.g. by a clicking of the mouse thereon shown in Figs. 3B and 3C), the user is automatically connected to the home-page of the IPI Web-site (hosted on each mirrored IPD Server) which, as shown in Figs. 3B and 3C, supports a Netscape-style "framework", within which web-

pages accessed through the IPI web-site are displayed. An excellent tutorial on "framing" entitled "THE Netscape Frames Tutorial <sup>TM</sup> (2nd edition)" by Charlton D. Rose set forth at the URL: "http://www.newbie.net/frames/", last visited by Applicant on March 5 26, 1997.

As shown in Fig. 3C, the IPI Web-site of the illustrative embodiment has a framework characterized by three-display fields, namely: a sponsor frame 20A; a control frame 20B; and an information display frame 20C for displaying web pages. In alternative 10 embodiments, there may be more or less display frames than that shown in Fig. 3C. Each frame acts as a separate display screen where variables such as web-pages, scrolling, page colors, etc., are independently controllable. In practice, it is suggested that the physical layout of the Netscape-style browser "framework" be designed to 15 simultaneously accommodate the needs of the consumers using the particular Client Subsystems of the present invention, as well as the needs of the retailers who typically will host client subsystems hereof either (1) physically within their stores, and/or (2) electronically on their WWW sites using Web browser framing techniques as well.

20 In the case of Client Subsystems physically hosted (i.e. located) within the environment of retail stores, a three-field browser framework as shown in Fig. 3C will be highly effective in meeting the needs of the retailer, consumer, and business organization delivering the IPI Finding and Serving Subsystem of the present invention (hereinafter 25 the "IPI Provider"). As shown in Fig. 3C, the first (top-most) display field, the sponsor frame 20A, can be used to display to the consumer, a Web page (e.g. HTML-encoded document) containing a message that the IPI Finding and Serving Subsystem is being delivered to the consumer

by the IPI Provider under, for example, the sponsorship of either: (1) the hosting retailer; (2) one or more advertisers posting advertising "banners" in the display frame 20A; or (3) the consumer him or her self by paying a subscription fee or the like. Understandably, the method of 5 sponsorship employed will vary from embodiment to embodiment of the present invention. An exemplary message for this display screen might read, for example, as follows:

10 "Welcome to the UPC Request™ Consumer Product-Information Finding and Serving System sponsored by THE HOME DEPOT for your shopping convenience and pleasure."

15 The height of the sponsor frame 20A need only be a small fraction of the consumer's display screen (e.g. 3/4 inches) to convey this message to the consumers during use of the IPI Finding and Serving Subsystem of the present invention within the retailer's real (or virtual) shopping 20 environment.

As shown in Fig. 3C, the second (left-most) display field, the control frame 20B, is used to display a HTML-encoded document containing a GUI-based "control panel" 21 for the consumer product information finding and serving subsystem of the present invention. In 25 the illustrative embodiment, this control panel 21 includes five Check Box type buttons, namely: a first Check Box type button 21A which, when selected, automatically activates the Manufacturer/Product Registration Mode of the subsystem; a second Check Box type button 21B which, when selected, automatically activates the Manufacturer 30 Website Search Mode of the subsystem; a third Check Box type button

21C which, when selected, automatically activates the UPN-Directed Information Access Mode of the subsystem; a fourth Check Box type button 21D which, when selected, automatically activates the Trademark-Directed Search Mode; and a fifth Check Box type button 21F 5 which, when selected, automatically activates the Product-Description Directed Search Mode of operation of the subsystem. Each of these Check Box type buttons is hot-linked to a particular HTML-encoded document residing on the IPD Server(s) 11 of the subsystem hereof.

As illustrated in Fig. 2B, each IPD Server 11 comprises a 10 relational-database management subsystem (RDBMS) 11A, a HTTP Server 11C, and a common gateway interface program (CGI) 11B for interfacing the RDBMS 11A with the HTTP Server 11C. In the illustrative embodiment, each synchronized IPD Server 11 can be realized by, for example, the PowerMac® 8550/200 Internet Server from Apple 15 Computer, Inc., the Origin 200 Server or the O<sub>2</sub> Desktop Workstation from Silicon Graphics, Inc., or any other suitable computing machine. Each such computing machine also comprises: relational-database managment software and Web-site development software for realizing RDBMS 11A; CGI scripting software for realizing CGI 11B; and HTTP 20 software for realizing HTTP Server 11C in the web-based, client-server type computer system architecture of the illustrative embodiment. The RDBMS 11A has several functions, namely: (i) to maintain the IPI 25 Web-sites hereof; and (ii) to maintain the IPI Registrant Database and the Non-IPI Registrant Database schematically illustrated in Figs. 4A and 4B, respectively. The function of the CGI 11B is to provide an interface between the HTTP Server 11C and the RDBMS 11A while enabling the five primary modes of operation of the consumer product information finding and delivery subsystem hereof. The function of the

HTTP Server 11C is to (i) support HTTP and (ii) serve HTML-encoded pages from IPI Web-sites and database requests from the IPI and Non-IPI Registrant Databases. The relational database management system (RDBM) 11A can be constructed using a database programming language such as the 4th Dimension® SQL Language, the Sybase language, or any other suitable database language which allows for database programming and database connectivity over the Internet. A suitable development program for creating dynamic Web-sites with the integrated database structures of Figs. 4A and 4B is the "4D Web SmartServer" or 4D Version 6.0, both from ACI, Inc. It is understood, however, that database development programs such as Oracle, Sybase SQL, Powersoft, Microsoft Access 97, etc. can be used to construct and maintain the relational database management subsystems of the type illustrated in Figs. 4A and 4B.

As shown in Fig. 1, each IPD Server 11 is interfaced with an ISP 10A in a conventional manner. The actual number of IPD Servers 11 used in any particular application will depend on various factors including, for example, user demand, Internet traffic conditions, network router capacity and performance, etc. Each such IPD Server 11 is assigned a static IP address and a common domain name on the Internet according to the Domain Name System (DNS) well known in the art. Data synchronization among such databases can be achieved using conventional data synchronization techniques well known in the art. In addition, a backup and mirroring program can be used to maintain data security. Preferably, the synchronized IPD Servers are maintained by a team of network managers under supervision of one or more webmasters.

Notably, the three-field Netscape-style display framework served

from the IPD Servers 11 hereof to client subsystems 13 employed within the IPI Finding and Serving Subsystemprovides a unique and effective way of satisfactorily addressing the needs of consumers, hosting retailers, manufacturers and the IPI Provider(s) alike. It is 5 understood, however, that in alternative embodiments of the present invention, it may be desirable or necessary to refrain from serving "framed" browser display screens from the IPD Servers 11 to the client subsystems 13 without detracting from the present invention.

Each IPI Server 12 can be realized by, for example, the 10 PowerMac® 8550/200 Internet Server from Apple Computer, Inc., the Origin 200 Server or O2 Desktop Workstation from Silicon Graphics, Inc., or any other computing machine that can perform the function of a Server in a web-based, client-server type computer system architecture of the illustrative embodiment. As shown in Fig. 1, each IPI Server 12 15 is interfaced with an ISP 10A in a conventional manner. Each such IPI Server 12 is assigned a static IP address and a unique domain name on the Internet. Each IPI Server 12 is also provided with (i) Web-site development software for creating HTML-encoded multi-media pages for Web-site development, and (ii) Web-site server software for 20 supporting HTTP and serving HTML-formatted pages of hypermedia-type Web-sites containing product related information of a multi-media nature. Such Web-sites can be expressed in HTML and/or VRML or any other suitable language which allows for Web-site construction and Web-site connectivity. Web-site management software, such as Adobe® 25 SiteMill™, can be used to maintain correct hyper-links for any particular Web-site. Preferably, the IPI Servers 12 are maintained by a team of network managers under supervision of one or more webmasters.

Each Client Computer Subsystem (hereinafter "client subsystem") 13 can be realized by any computing system employing operating system (OS) software (e.g. Macintosh, Windows 95, Windows NT, Unix, etc.) which supports an Internet browser program (e.g. Netscape 5 Navigator, MicroSoft Internet Explorer, NCSC's Mosaic, etc.). The operating system should also include: (1) Internet networking software that supports the TCP/IP networking protocol (required by HTTP, FTP and the like) and provides a GUI-based Web browser interface; and (2) Electronic Data Interchange (EDI) networking software that supports EDI 10 between two or more client subsystems over the VAN-based EDI network 14 illustrated in Fig. 2. Alternatively, client subsystems may also be realized by any of the following systems: (i) a Newton MessagePad 130 (running the Newton 2.0 Operating System and NetHopper™ Internet Software); (ii) a Pippin™ computer system from 15 Apple Computer, Inc.; (iii) a network computer (NC) that supports the Java™ programming language and Java applets expressed therewith; (iv) a Sony® WebTV Internet Terminal (supported by the WebTV Service provided by WebTV Network, Inc.); or the like. As shown in Fig. 1, each Client Computer is interfaced with an ISP 10A in a conventional 20 manner. Each such client subsystem may be assigned a static IP address and a unique domain name on the Internet, or one may be dynamically assigned thereto by way of its ISP depending on its connectivity. Optionally, any client subsystem may include Web-site server software for creating and maintaining one or more hypermedia- 25 type Web-sites in a manner well known in the art.

Typically, each client subsystem 13 will be maintained by either present or future manufacturers, retailers and/or consumers of products, about which information can be found on the Internet. As

shown in Fig. 3A1, any client subsystem of the present invention may be realized as a desktop computer workstation comprising: a processor and memory 19; a visual display monitor 20; a keyboard 21 ; a GUI mouse 22; and a bar code symbol reader 23 for reading UPC and other 5 types of bar code symbols printed on products, brochures, documents, and the like.

As shown in Fig. 3A2, any Client Computer 13 may also be realized in the form of a Web-based multi-media kiosk, designed for use as a "virtual sales agent" within retail shopping environments. As shown, 10 the Web-based kiosk of the present invention comprises: a floor, wall or ceiling supported housing 25; an onmidirectional laser bar code symbol reader (e.g. Metrologic MS 6720 Laser Scanner) 26 for reading UPC (and other type of) symbols printed on products, brochures, documents and the like; an active-matrix LCD-type visual display screen 27 for viewing 15 product related information automatically displayed thereon in response to the entry of the UPC numbers scanned into the UPC Number Entry Window 21D below the IPI Finder button 21A of Control Strip 20B displayed on the client subsystem, as shown in Fig. 3C; a touch-screen type keyboard and pointing device 28 for clicking on anchored links on 20 Web pages, entering information into client subsystem during its use; audio-speakers 29A for supporting multimedia Web-site that may be visited when using the client subsystem; a color or black/white printer for printer 29B for printing out Web pages under consumer command during an information finding session using the system; and also, one or 25 more floppy-disc (or otherwise removable) drive units 29C, accessible to the consumer for recording promotional and trial versions of information-based consumer products (e.g. video an audio recordings, computer software products, and the like) on removable information

storage media (e.g. 1.44MB floppy discs, 100MB Zip® floppy discs, 1GB Jazz® floppy discs, etc.) supplied by either the retailer or consumer. Optionally, the kiosk can be provided with a stereoscopic micropolarizing LCD panel from Vrex, Inc. of Elmsford, NY so that micropolarized

5 spatially-multiplexed images (SMIs) of 3-D objects represented with VRML-encoded Web pages can be stereoscopically perceived by consumers when viewed through either an electrically-passive polarizing visor structure supported from the housing of the kiosk, or a pair of polarizing eyeglasses tethered to the kiosk housing and doned by

10 the consumer. Notably, by virtue of its compact size and low power requirements, this Web-based kiosk can be easily located in supermarkets, department stores, superstores, home-centers, discount retail outlets, or any other public location where consumer-products are being sold, offered for sale, and/or serviced.

15 As shown in Fig. 3A3, any Client Computer 13 within the system hereof may be realized in the form of the Web-based multi-media kiosk 34, also designed for use as a "virtual sales agent" within retail shopping environments. As shown, the Web-based kiosk 34 comprises: an ultra-compact housing 35 capable of being supported upon a pair of support

20 rods (35A), a vertical support surface (e.g. wall), a horizontal support surface (e.g. countertop), or supported from a ceiling or pedestal; an onmidirectional laser bar code symbol reader (e.g. Metrologic MS 6720 Laser Scanner) 36, modified with handle 36A, for reading UPC (and other type of) symbols printed on products, brochures, documents and

25 the like; an active-matrix LCD-type visual display screen 37 for viewing product related information automatically displayed thereon in response to the entry of the UPC numbers scanned into the UPC Number Entry Window 21D displayed on the client subsystem; a touch-screen

type keyboard and pointing device 38 for clicking on anchored links on Web pages, entering information into client subsystem during its use; audio-speakers 39A for supporting multimedia Web-site that may be visited when using the client subsystem; a color or black/white printer 5 for printer 39B for printing out Web pages under consumer command during an information finding session using the system; a scanner support stand 40 with guide flanges 41A and 41B, for guidably receiving and supporting the scanner 36 as shown in Fig. 3A3; a recoilable scanner cable 42, dispensed from cable cartridge 43 and 10 guided through hole 44 in scanner support bridge 40; a telephone handset 45 and associated communication apparatus for making telephone call over a public telecommunications switching network (PSTN) independent of the operation of the Web-browser of the kiosk; and a mag-stripe card reader 46 and associated credit transaction 15 terminal for automatically dialing up consumer credit and like databases over the PSTN (or Internet) upon scanning mag-stripe card 47 through reader 46. Optionally, the kiosk may also include one or more floppy-disc (or otherwise removable) drive units (not shown) accessible to the consumer for recording promotional and trial versions 20 of information-based consumer products (e.g. video an audio recordings, computer software products, and the like) on removable information storage media (e.g. 1.44MB floppy discs, 100MB Zip® floppy discs, 1GB Jazz® floppy discs, etc.) supplied by either the retailer or consumer. Also, the kiosk can be provided with a stereoscopic micropolarizing LCD 25 panel from VRex, Inc. of Elmsford, NY so that micropolarized spatially-multiplexed images (SMIs) of 3-D objects represented with VRML-encoded Web pages can be stereoscopically perceived by consumers when viewed through either an electrically-passive polarizing visor

structure supported from the housing of the kiosk, or a pair of polarizing eyeglasses tethered to the kiosk housing and doned by the consumer. Notably, by virtue of its compact size and low power requirements, this Web-based kiosk can be easily located in 5 supermarkets, department stores, superstores, home-centers, discount retail outlets, or any other public location where consumer-products are being sold, offered for sale, and/or serviced.

As shown in Fig. 3A3, the bar code symbol reader is supported within its support stand/bridge 40. In this configuration, the laser 10 scanning field of the reader is projected downwardly upon the surface of the LCD touch screen display panel. By virtue of the angle of tilt of the display panel 37 relative to the ground surface of the retail store, and the projection angle of the laser scanning field relative to the display panel surface, will enable the consumer to easy read the bar 15 code symbol on most consumer product by simply presenting the bar code symbol to the scanning window. In the event the the product is too large to lift from the floor to the scanning window, the consumer can simply remove the bar code symbol reader 36 from its support stand 40, as shown in Fig. 3A3', by pulling cord 42 out of its takeup 20 compartment 43 so that the reader is positioned to read the bar code symbol 49 on the retail consumer product 48. When symbol scanning is completed, the bar code symbol reader is lifted back into its stand support postion, between support guides 41A and 41B, while the cord 42 is automatically recoiled back into storage compartment 43, as 25 shown in Fig. 3A3. While the consumer uses the kiosk to scan UPC (or UPC/EAN) symbols on products, to find, access and display consumer product-related information on the display panel 37, he or she may choose or need to use telephone 45 to speak with a manufacturer's

representative and engage in electronic commerce, and/or use the magstripe card reader 46 to read magstripe cards (e.g. credit cards) to pay for consumer purchases made over the Internet using the kiosk of the present invention. Where the Web-browser of the client subsystem 5 13 is provided with a bar code symbol reader, the consumer may at particular EC-oriented Web-sites scan UPC (and/or UPC/EAN) numbers on products with his or her home (e.g. in the pantry) in order to remotely order products for purchase and direct shipment to the consumer's home by a particular delivery service. The consumer 10 product information delivery system of the present invention shall enable an infinite array of applications with regard to electronic commerce and home shopping, now made possible by the present invention.

As shown in Fig. 3A4, the Web-enabled kiosk of Fig. 3A3 is 15 modified to include a bar code symbol reader having a "cordless-type" scanner interface, thereby eliminating the need for the communication/scanner cable 42 shown in Fig. 3A3. RF-based wireless interfaces, as disclosed in US Letters Patents and Published International Patent Applications, incorporated herein by reference, 20 can be used to realize this cordless-type scanner interface arranged between the bar code symbol reader 36 and the Web-enabled access terminal integrated within the information kiosk. In all other respects, the kiosk shown in Figs. 3A4 and 3A4' is similar to the kiosk shown in Figs. 3A3 and 3A3' and described above.

25 In Fig. 3A5, a fifth illustrative embodiment of the client computer system hereof is realized in the form of a consumer product information access terminal integrated within a point-of-sale (POS) station in retail shopping environments. While this embodiment of the client computer

system hereof is particularly adapted form use by sales clerks at POS stations, as well as by store employees behind retail information/service counters, it may also be used consumers and shoppers alike provided the necessary accomodations are made as 5 described hereinbelow.

As shown in Fig. 3A5, a client subsystem 13 hereof is realized as consumer product information access terminal 60 comprising: a POS station 61 having a cash register computer 61A and keyboard 61B, and a price/UPC database 61C containing price and UPC number information 10 tables; an Web-enabled computer terminal 62 connecting the POS station 61 to the Internet infrastructure 10 through an ISP 10A; a bar code symbol reader 63 connected to the POS station 61; a 15' diagonal active-matrix LCD panel 64, operably connected to the output of the Web-enabled computer system 62 and the output of the cash register 15 computer 61A, and having a swivel-base 65 that allows the LCD panel to be oriented in various viewing positions for displaying consumer product-related information accessed from the IPI Registrant Database shown in Figs. 4A1 and 4A2, as well as price information accessed from the price/UPC database 61C. The advantage of this client computer 20 subsystem is that enables a retails sales clerk check out customer purchases in a conventional manner, and conveniently access the IPI Finding and Serving Subsystem when check-out business is relatively slow, to answer any questions that consumers may have regarding a particular product in the retail store. This system will be ideal in retail 25 environments having a high level of customer service and large retail service staff. In such instances, the IPI Finding and Serving Subsystem hereof empowers retail sales clerks, at the POS counters as well as customer service counters, by enabling them to quickly access any item

of product related information linked to products in their stores by manufacturers and their agents.

In alternative embodiments, any Client Computer 13 can be realized as a network computer (NC), a Web-TV™ type Internet Terminal, a Newton MessagePad® PDA, or any other device providing Internet access to the IPI Web-site (i.e. mirrored IPD Servers) of the present invention. Notably, the same functionalities provided within the Web-based kiosk described above can be embodied with such alternative embodiments of client computer system.

10

#### The Database Structure of the IPD Server

In the illustrative embodiment of the present invention, each data-synchronized IPD Server 11 of the preferred embodiment maintains at least two different relational-type databases, namely: a IPI Registrant Database for storing information about manufacturers whose products are registered with the system; and a Non-IPI Registrant Database for storing information about manufacturers whose products are not registered with the system. A schematic representation of the IPI Registrant Database is shown in Fig. 4A1, whereas a schematic representation of the Non-IPI Registrant Database is shown in Fig. 4B.

As shown in Fig. 4A1, the relational-type IPI Registrant Database maintained by each IPD Server comprises a plurality of labelled information fields for each product "registered" therewith, namely: an IPN Information Field for storing information (e.g. numeric or 25 alphanumeric string) representative of the Universal Product Number (e.g. twelve-digit UPC Version A number, eight-digit UPC Version E number, thirteen-digit UPC/EAN number, or twelve-digit UPC Version A number plus five-digit Add-On Code Segment number frequently

used in the publishing industry) assigned to the consumer product; a Company Name Information Field for storing information (e.g. numeric or alphanumeric string) representative of the name of the company making, selling or distributing the corresponding product; a URL

5 Information Field(s) for storing information (e.g. numeric or alphanumeric string) representative of the Universal Resource Locator (URL) or Universal Resource Locators (URLs) at which information resource(s) of the multimedia type can be found on the Internet relating to the corresponding consumer product; a Trademark Information Field

10 for storing information (e.g. text and/or alphanumeric strings) representative of each trademark (or Domain Name) used in connection with the promotion, sale, distribution and/or use of the corresponding product, and preferably registered with the United States Patent and Trademark Office (USPTO) or other governmental or quasi-

15 governmental agency (e.g. INTERNIC or Network Solutions, Inc.); a Product Description Information Field for storing information (e.g. text strings) descriptive of the corresponding product; an E-mail Address Information Field for storing information (e.g. numeric or alphanumeric string) representative of the e-mail address of the corresponding

20 company (e.g. manufacturer) on the Internet; and a Status Information Field for storing information (e.g. numeric or alphanumeric string) representative of whether the company (e.g. manufacturer) associated registered product has paid their monthly, quarterly or annual registration fees associated with registration within the IPD Servers of

25 the information finding and serving subsystem hereof. Notably, each information item contained with the information field shown along the same horizontal line of Fig. 4A1 are related or linked.

In general, the URL stored in the URL Information Field specifies

the address of an information resource on the Internet (e.g. Web), and thus may point to any one of the following types of information resources: a HTML document or file on the World Wide Web (expressed in the HyperText Markup Language); a single record in a database; the  
5 front-end of an Internet program such as Gopher; or the results of a query made using another program. In accordance with convention, the syntactic structure of each URL generally comprises: a Protocol Specifier, such as "http", "ftp", "gopher", "news", or "mailto", and specifies the type of resource that the URL is pointing (i.e. connecting) to; a Host Indicator,  
10 represented by double slashes "//" if the URL is requesting information from a Web Server; Server Name comprising a Internet Domain Name (e.g. "www."), the address of the Web Server (e.g. "ibm."), and a designator (e.g. "com", "edu", "int", "mil", "net", "org", etc.) identifying who owns the server or where it is located; a Path Name, such as  
15 "Products/Computers/", indicating a path to the destination information file on the identified Server; and a Resource Name (including file extension, e.g. ".html"), such as "aptiva.html", identifying the actual named information file that contains actual information resource specified by the URL.  
20 As used herein as well as in the Claims to Invention, the term "registered" and the variants thereof shall be understood to mean listed or having an entry within a database. Such listing or entry can be achieved in a variety of ways including, but not limited to: (i) by specific request of the associated company or business; or (ii) by the system  
25 administrator without a request and/or authorization of the corresponding company or business linked to the product.

Notably, each information item contained with the information field shown along the same horizontal line of Fig. 4A1 are symbolically

related or linked. Different products of the same registrant or related registrant may also be linked together so that a user looking for information about a particular product is automatically provided URLs which are assigned to related products of the registrant which may 5 satisfy the goals or objectives of a particular advertising and/or marketing campaign or product promotion program of the registrant company. As it may be desired to relate particular products at particular points in time, the relationships therebetween can be dynamically changed within the IPI Registrant Database by a 10 straightforward database updating operation carried out by a system administrator (or manager) who, in theory, can be located virtually anywhere throughout the world. Expectedly, such database updating operations would be carried out using appropriate system access and security procedures well known in the art.

15 Inasmuch as the UPC data structure is presently employed as a universal product identifier (i.e. a primary data structure) in a majority of industries throughout the world, its twelve-digit numeric string (for UPC Version A) or eight-digit numeric string (for UPC Version E) will be a preferred UPN (in many applications) for purposes of carrying out the 20 principles of the present invention. This twelve (12) digit human-readable number, printed on the bottom of each UPC label (and encoded within the bars and spaces of the UPC label itself), comprises: (i) a six digit manufacturer number assigned to the manufacturer by the Uniform Code Council, Inc. (UCC) of Dayton, Ohio, and consisting of a one 25 digit "number system" number and a five digit manufacturer code; (ii) a five digit "product" number assigned to the product by the manufacturer; and (iii) a one digit modulo check digit (mathematically calculated) and added to each UPC number to check that the code has

been read correctly by the bar code symbol reader.

In order to provide the requester greater control over what information is actually displayed on its client subsystem, the URL Information Field of the IPI Database shown in Fig. 4A1 contains a number of information subfields. As shown in Fig. 4A2, these information subfields comprise: a Product Advertisement Information Field for storing information representative of URLs pointing to information on the Internet relating to advertising and/or promotion of the product; a Product Specification (i.e. Description) Information Field for storing information representative of URLs pointing to information on the Internet relating to specifications on the product; a Product Update Information Field for storing information representative of URLs pointing to information on the Internet relating to product updates, recalls, notices, etc; a Product Distributor (e.g. Wholesaler and/or Resaler) Information Field for storing information representative of URLs pointing to information on the Internet relating to distribution, sale and/or ordering of the product; a Product Warranty/Servicing Information Field for storing information representative of URLs pointing to information on the Internet relating to warranty, extended warranty offerings, servicing and maintainence of the product; a Product Incentive Information Field (e.g. rebates, discounts and/or coupons) for storing information representative of URLs pointing to information on the Internet relating to rebates, discounts and sales on the product; a Product Review Information Field for storing information representative of URLs pointing to information on the Internet relating to reviews, analysis, testing, inspection and/or comparison of the product; and Miscellaneous Information Field(s) for storing information representative of URLs pointing to information on the Internet relating

to miscellaneous aspects of the product (e.g., direct product sales on the WWW, product installation/set-up and operating manuals, company reports (10Ks, annual reports, etc.), and the like. Each URL symbolically linked to a UPC-labelled product registered in the Registered IPI

5 Database is categorized within one or more of these URL categories.

The list of URLs recordable in the IPI Registrant Database for each registered UPC-labelled product is virtually unlimited. Below are just a few examples of how the IPI Finding and Serving Subsystemhereof can be used as a virtual sales agent that provides value-added services to

10 consumers, retailers and the like.

For each CD sound recording, the URL list may contain a URL that points to a promotional QuickTime® video recording or the like on the WWW for reviewing and evaluation by the consumer. The promotional song can be by a commissioned or endorsing artist, as is typically done

15 in conventional advertising programs. The same can be done for video recordings on tape and digital video discs (DVDs). The URL may also provide the consumer with a down-loadable trial version of the product for a limited time period.

For each computer software product, the URL list may contain a URL that points to a multi-media clip on the WWW that provides a demonstration of the solutions that the software product provides, as well as the functions and development tools that it enables. It may also provide the consumer with a down-loadable version of the software product for a time-limited trial period.

25 For electronic consumer products, the URL list may contain a URL that points to a multi-media clip on the WWW that provides an audio-visual demonstration of the product in various user environments. Also, the URL can contain a URL that points to a Web-based Specification

Sheet that can printed out in an retail environment, at home, work or on the road.

For groceries and like articles, the URL list may contain a URL that points to a multi-media clip on the WWW that provides an QuickTime® 5 video recording or the like of the product, illustrating various cooking recipes and uses to which the product can be put. Also, the URL can contain a URL that points to a Web-based Discount Coupon that can printed out in the store, at home or work.

For toys, the URL list may contain a URL that points to a multi- 10 media clip on the WWW that provides an audio-visual demonstration of the toy along with promotional endorsements by the various characters used in its advertising campaign.

For clothing, garments, or accessories (e.g. wearing apparel), the URL list may contain a URL that points to a multi-media clip on the 15 WWW that provides an QuickTime® video recording or the like of the clothing clothing, garments, and/or accessories being modelled by stunning fashion models. Ideally, such video recordings, linked to paricular articles of wearing apparel by their UPC number, can be used to extend and augment the advertising campaign being carried out in 20 other forms of media (e.g. television, radio, print, billboards, etc.).

Preferrably, the manufacturer, its marketing personnel and advertising agents will actively participate in the creation of the product related information resources, as well as the placement of their URLs into the above-defined (or like) URL categories maintained within the 25 Database of the IPI Finding and Serving Subsystemhereof. Also, using the Manufacturer/Product Registration Subsystem hereof, manufacturers and/or their agents can easily link their UPNs (e.g. UPC and/or EANs) with such URLs and manage the same in a dynamic

manner to ensure that product related information on the Internet is accurately linked to the UPNs of the manufacturer's products. Through such active participation, the business objectives of any particular manufacturers or retailer can be promoted by way of the IPI Finding and Serving Subsystem of the present invention. In this way, the information requesting consumer is provided with only the kinds of product-related information which he or she seeks.

As shown in Fig. 4B, the Non-IPI Registrant Database maintained by each IPD Server comprises a plurality of labelled information fields for each product that is not currently registered with the IPD Server, namely: an IPSN (i.e. IPN) information Field for storing information (e.g. numeric or alphanumeric string) representative of the Universal Product Number (e.g. a UPC number from a UPC numbering system, or an EAN numbering system) assigned to the non-registered product; a Company Name Information Field for storing information (e.g. numeric or alphanumeric string) representative of the name of the company making, selling or distributing the corresponding non-registered product; a Trademark Information Field for storing information (e.g. text and/or alphanumeric strings) representative of each trademark used in connection the promotion, sale, distribution and/or use of the corresponding product, and preferably registered with the USPTO or other governmental agency; a Product Description Information Field for storing information (e.g. text strings) descriptive of the corresponding product; and an E-mail Address Information Field for storing information (e.g. numeric or alphanumeric string) representative of the e-mail address of the corresponding company (e.g. manufacturer) on the Internet; a Status Information Field for storing information (e.g. numeric or alphanumeric string) representative of whether the

company associated non-registered product has been solicited, by the IPD Server, and on what dates registration solicitation has occurred. Notably, each information item contained with the information field shown along the same horizontal line of Fig. 4A1 are related or linked.

- 5 The information required to construct the Non-IPI Registrant Database shown in Fig. 4B can be readily obtained from a number of commercially or publicly available information sources (e.g., the Universal Code Council, Inc., Dayton, Ohio; Quickresponse Services, Inc. Of Richmond, California; General Electric Information Services (GEIS) of
- 10 Delaware, Maryland; etc.

Constructing The IPI Registrant Database Within  
The IPI Finding And Serving Subsystem Hereof

- 15 The utility of the product finding functionalities of the IPI Finding and Serving Subsystem hereof depends in large part of the number of consumer-products registered with its RDBMS 11A, illustrated in Fig. 2B. In principle, numerous techniques may be employed separately and in combination with each other in order to construct the IPI and Non-IPI
- 20 Registrant Databases supported by the network of IPD Servers of the present invention. Six such techniques will be detailed below.

According to a first database construction technique, the administrator of the IPI Registrant Database would transmit Product Registration Requests (PRRs) in the form of electronic documents to each and every manufacturer having been issued, for example, a six digit UPC Manufacturer Identification Number (MIN) by the UCC, Inc. Such electronic documents can be transmitted using conventional MIME protocols such as, for example, STMP. The Product Registration Request document would seek to ascertain from the manufacturers the various

information items (including the menu of URLs) identified in the IPI Registrant Database of Fig. 4A1. In response to the Product Registration Request, each solicited manufacturer would send back to the administrator of the IPI Registrant Database (for each of its consumer products) its UPC number and a menu of URLs indicating the location of the information resources identified in the Product Registration Request document. This information can then be used to readily construct the IPI Registrant Database of the illustrative embodiment.

According to a second database construction technique, a global advertising campaign would be launched (over various media) in order to solicit the various information elements identified in the IPI Registrant Database of Fig. 4A1 and thus register the products of the manufacturers selling UPC-labelled products. Preferably, such information would be collected by way of an electronic document transfer subsystem set-up to cooperate with the system of the present invention in order to facilitate database construction operations.

According to a third database construction technique, the IPI system itself would continuously solicit consumer product registrations over time in order to collect information from companies responding favorably to the solicitations. While such solicitation efforts can involve the issuance of product registration requests using various types of media, it is preferred that the information collection operations are carried out using electronic document transfer techniques described hereinabove.

According to a fourth database construction technique, a number of commercial on-line Internet search engines, such as Altavista<sup>TM</sup>, Yahoo<sup>TM</sup>, WebCrawler<sup>TM</sup>, Lycos<sup>TM</sup>, Excite<sup>TM</sup>, as well as powerful off-line parallel-processing search engines, would be enlisted to analyze (i.e. mine)

information on the World Wide Web in order to collect and link the information elements specified in the IPI Registrant Database of Fig. 4A1.

Once an "initial" IPI Registrant Database has been constructed 5 using any one or more of the four database construction techniques described hereinabove, manufacturers registered therewith can be periodically contacted using Web-based electronic document (i.e. message) transfer techniques in order to request updating and confirmation of the UPN/URL listings contained within the database of 10 the IPI subsystem of the present invention.

According to a fifth database and preferred construction technique of the present invention, the Registrant IPI Database of the system would be initially "seeded" with several items of information obtained and related without the assistance of manufacturers of UPC-labelled 15 products. Such information items include: (1) the six digit UPC Manufacturer Identification Numbers encoded in the UPC symbols (and numbers) applied to the products of such UCC-registered manufacturers; and (2) the URLs of the Web home pages of such manufacturers.

The first step of this database construction method involves 20 obtaining the six digit Manufacturer Identification Numbers (MINs) uniquely issued to manufacturers by the Uniform Code Council, Inc. of Dayton, Ohio. Such MINs can be obtained from various commercial sources including GE Information Services, QuickResponse Services, Inc., as well as the UCC. At present, about 180,000 Manufacturers 25 Identification Numbers have been issued to manufacturers by the UCC. A string of six zeros (i.e. 000000) may be added to each one of these 180,000 or so six digit Manufacturer Identification Number in order to produce 180,000 or so 12 digit numbers (i.e. hereinafter referred to as

"Manufacturer's Reference Numbers) for the 180,000 or so manufacturers listed in the IPI Registrant Database under construction. As each such Manufacturer Reference Number has the same length as a UPC number of its manufacturer, this number can be conveniently 5 thought of as the "Manufacturer Reference UPC Number" which can be stored in the UPN Information Field of the Database along with the corresponding manufacturers name being stored in the Company Name Information Field.

The second step of the method involves finding the URL of the 10 Web home page of each of the 180,000 manufacturers who have been assigned a Manufacturers Identification Code and are listed in the Database. Such URL information can be found using a number of available techniques: (i) using a commercially available search engine to search the WWW in order to find the URL of the home page of each 15 manufacturer's Web-site, if it has one, using the name and address thereof obtained during the first step above; or (ii) using a commercially available (INTERNIC-enabled) Domain Name search service that uses the names and addresses of the manufacturers (obtained during the first step above) in order to determine whether a particular manufacturer 20 has a registered domain name on the Internet, and if so, is the domain name being actively used in a URL that points to the home page of the manufacturer's Web-site. Once obtained, such URLs are then added to the IPI Database, along with the e-mail and/or other address of the manufacturer symbolically linked thereto (if available).

25 Having constructed the "seeded" Database, it can then be used to connect the client subsystem of users to the home page of Web-sites of manufacturers of particular products. Initially, when an Internet user provides the UPC number of a particular product as input to the Input

Box of the HTML form displayed in the information display frame of the client subsystem (e.g. when operated in its Manufacturer Website Search Mode), then the IPD Server need only compare the first six digits of the entered UPC number against the first six-digits of the

5 Manufacturer Reference UPC Numbers (i.e. Manufacture Identification Numbers) listed in the "seeded" Database. The corresponding (home-page) URL of the matching manufacturer is returned to the client subsystem  $C_a$  for display. In instances of an initially seeded Database, in which only the "Manufacturer Reference UPC Numbers" are listed

10 therein, the requesting client subsystems are provided with the URLs of the home pages of the symbollically linked manufacturers. Then as manufacturers begin to register their consumer products with the system (e.g. in response to mass e-mailings, advertisements and/or marketing and promotional efforts, etc.), the IPD Database will return a

15 menu of "hot-linked" URLs, for each registered product, pointing to various types of product-related information resources on the Internet (described above) that can be easily accessed by simply clicking thereon in a conventional manner. Over time, Manufacturer Reference UPC Numbers and the URLs of the "home pages" of such manufacturers will

20 become replaced by the UPC numbers of registered products and the menu of URLs on the WWW symbollically linked thereto by the manufacturers, thereby allowing consumers and users of the system to precisely pinpoint consumer product-related information on the WWW which has been specified by the manufacturer, its marketing

25 department and/or advertising agency. With manufacturer's and advertiser's participation and feedback, the intially seeded Database described hereinabove will quickly grow into a robust relational database richly filled with the various information items described in

Figs. 4A1 and 4A2, including the symbolically linked UPCs and URLs that point to very specific consumer product related information resources (i.e. files) stored within IPI Servers of the system located across the global expanse of the Internet.

5 According to a sixth database construction technique of the present invention, the Registrant IPI Database of the system would be constructed by allowing each manufacturer to construct a limited or restricted version of the master UPN/URL Database (i.e. Registrant IPI Database) of the system, wherein only UPC-encoded products of the 10 registered manufacturer and Web-based information items related thereto are entered into the database. As will be described in greater detail herebelow in connection with the third method of Product Registration in the subsystem hereof, the creation of such limited-version UPN/URL databases can be carried out by providing each 15 registered manufacturer with a computer program that allows its administrators to construct and manage a limited UPN/URL database in a "turn-key" manner. Also, from its Website, the manufacturer can serve the limited UPN/URL database over the Internet to consumers. As part of the registration process, each registered manufacturer transmits its 20 limited UPN/URL database to Web-server 30 which then integrates all such databases in order to update the master UPN/URL database (IPI Registrant Database) of the system.

#### Overview of Modes of Operation For IPI Finding and Serving Subsystem

25 In order to enter a primary mode of operation of the IPI Finding and Serving Subsystem, the consumer or retail sales clerk selects a particular mode activation button (e.g. 21A, 21B, 21C, 21D or 21E) displayed in the control frame 21B of the GUI browser program at the

requesting client subsystem 13. Upon making the selection, the Web browser at the client subsystem 13 automatically requests a particular HTML-encoded form (typically residing on the IPD Server(s) 11). This HTML form corresponds to the selected mode of operation, and is

5 displayed within the information display frame 20C of the Web browser of the requesting client subsystem. The HTML-encoded form corresponds to the selected mode and is linked to a CGI-script related to the selected mode and possibly to other HTML forms required to carry out the database access and/or management process associated

10 therewith. The requesting client subsystem then enters the information requested by the HTML form displayed within the information display frame 20C of the Web browser's GUI interface. Information entry into the HTML form can be carried out using bar code symbol reading equipment, keyboard or keypad, speech dictation equipment (by Dragon

15 Systems, Inc. of Newton, Massachusetts), and the like.

In general, the particular messages which will be displayed within the HTML forms during any particular mode of operation will depend upon several factors namely: whether the IPI Web-site is intended for access by bar code driven kiosks (i.e client subsystems 13) as shown, for

20 example, in Figs. 3A2, 3A3, 3A4, and 3A5 located within retail environments; or whether the IPI Web-site is intended for access by desktop, laptop and palmtop client computer systems 13 as shown, for example, in Fig. 3A1 located at home, in the office or on the road.

For example, if the IPI Web-site supported by the IPI Finding

25 and Serving Subsystem hereof is intended for access by bar code driven kiosks, then the HTTP documents related to the IPI Website will be particularly adapted to facilitate the use of bar code symbol reader at the client subsystem. This way UPNs (e.g. UPC or EAN symbols) can be

easily entered into the subsystem without manual key-entry operations. In contrast, if the IPI Web-site supported by the IPI Finding and Serving Subsystem hereof is intended for access by client subsystems not having bar code symbol readers (e.g. Web-enabled computer systems at home, in the office or on the road), then the HTTP documents related to the IPI Website will be particularly adapted to facilitate the use of data-entry display screens at the client subsystem. This way, UPNs (e.g. UPC or EAN symbols) can be easily entered into the subsystem using bar code symbol scanners avoiding manual key-entry operations. In the illustrative embodiment, bar code-code driven and manual data-entry IPI Websites are served from a "framed" GUI interface, in which the control strip 21B has five (5) Check Boxes 21A through 21E described above which enables the consumer, retail sales/service personnel as well as manufacturers to select the particular mode of operation that suits his or her consumer product information needs at any particular instance in time.

#### Manufacturer/Product Registration Mode Of Operation

Referring to Fig. 5A, the high level structure is shown for a communication protocol that can be used among a client subsystem C<sub>a</sub>, an IPD Server S<sub>b</sub>, and an IPI Server S<sub>c</sub> of the IPI finding and serving subsystem hereof when it is induced into the Manufacturer/Product Registration Mode of operation from the point of view of the depicted client subsystem. Fig. 6A provides a high level flow chart illustrating the steps involved in carrying out this communication protocol when the IPI Finding and Serving Subsystem is in its Manufacturer/Product Registration Mode of operation.

As indicated at Block A in Fig. 6A, when selected from the user-

interface of an IPI Website, the first Check Box type button 21A automatically activates the Manufacturer/Product Registration Mode of the IPI Finding and Serving Subsystem by sending an HTTP request to the IPD Server(s) 11 based on a URL hot-linked to the selected Check 5 Box. As indicated at Block B in Fig. 6A, this causes a HTML-encoded document residing on the IPD Server(s) 11 to be served from the HTTP Server thereof to requesting client subsystem for display on the information display frame 20C thereof. The HTML document of the illustrative embodiment displays several types of information relevant 10 to the Manufacturer/Product Registration Mode, namely: eligibility requirements (i.e. qualifications) for a manufacturer to register with the IPI Finding and Serving Subsystem; optional ways of registering consumer products and product-related information with the Manufacturer/Product Registration Subsystem hereof 33; ways of 15 acquiring computer software necessary for managing consumer product-related information (e.g. UPNs, URLs, trademarks and product descriptors) on a particular computing platform using EDI techniques supported by the Manufacturer/Product Registration Subsystem 33; etc; and one or more Check Boxes embodying links (i.e. anchors) to HTML 20 documents, CGI scripts and the like designed to facilitate this mode of operation. Notably, at least one of these HTML documents will be located on the Web Document Server 30 of the Manufacturer/Product Registration Subsystem 33, providing manufacturers (and/or their designated information-managers and agents) with a point of entry into 25 the manufacturer/product registration process hereof. As indicated at Block C in Fig. 6A, the manufacturer and/or its agent follow the instructions displayed on the HTML document, linking to the Web Document Server 30 of the Manufacturer/Product Registration

Subsystem 33 and filling out the various HTML forms transmitted to the requesting client subsystem, downloading Web-based EDI software for UPN/URL management; and the like. While carrying out registration of manufacturers with the subsystem is relatively straightforward, there 5 are a number of different ways of carrying out the Product Registration Mode of the subsystem. These alternative techniques will be described below.

The first method illustrated in Fig. 2 involves by carrying out FTP between a client subsystem of the registering manufacturer (or its 10 agent)  $M_i$  and an IPD Server in order to update the IPI Registrant Database associated therewith. This can be carried out by the manufacturer's officer or agent surfing to the IPI Website, selecting the "Product Registration Mode" from the control strip, and then following the instructions displayed on the various screens of the Website in this 15 mode. When using the first method, product UPCs, URLs and other information elements can be formatted within suitable Product Registration Forms and transmitted by FTP from the client subsystem or Database Server of a registering manufacturer to the IPD Server 11 so that the IPI Registrant Database thereof can be updated accordingly. 20 The first method will be desirable typically when registering a few consumer-products.

The second method illustrated in Fig. 2A, involves first carrying out EDI between a client subsystem of the registering manufacturer (or its agent) and the UPN/URL Database Subsystem 9, and then carrying 25 out FTP or SMTP between the client subsystem and an IPD Server in order to update the IPI Registrant Database maintained therein. The second method will be desirable when a manufacturer needs or desires to register a large number of consumer-products. The details of these

information transmission methods will be described below.

When using the second method, conventional EDI protocols can be used to transmit product UPCs, URLs and other information elements from client subsystems or Database Servers of manufacturers to the

5 UPN/URL Database Subsystem 9 of the present invention. FTP can be used to transmit UPCs and URLs from the UPN/URL Database Subsystem to each IPD Server in the system so that the IPI Registrant Database thereof can be updated accordingly. Once registered with the system using either of these methods in the Product Registration Mode, such

10 consumer-products can be easily found on the Internet by anyone wishing to use the product finding techniques of the present invention.

The third method involves carrying out electronic document interchange over the Internet between the WebDox Remote™ Computer System 13 and the WebDox™ Server 30 of the system of the present invention, and communication between the WebDox™ Server 30 and the WebDox™ Admin computer system 31 of the system hereof. The various steps involved in this embodiment of the consumer product registration process will be described in detail below.

When the manufacturer selects the "Product Registration Mode" of

20 the system, a Manufacturer Registration Form is automatically downloaded from the WebDox™ Server 30 to the Manufacturer's client computer system 13 (i.e. the WebDox Remote™ Computer System). At the end of the downloading process, a Manufacturer Registration Form is presented (i.e. displayed) and the manufacturer then enters some

25 requested identification information (e.g. Manufacturer's Company Name, Address, Name of CEO and President, phone number, 6-digit Manufacturer Identification Number assigned by the UCC, etc.) and presses the "Send" button on the Manufacturer Registration Form. The

form is then transmitted immediately via the Internet and received by the WebDox™ Server 30. At the WebDox™ Server 30, an automated process takes the information in the Manufacturer Registration Form and registers the Manufacturer with the system.

5       Upon registering the manufacturer with the system, the manufacturer is asked to select which version of "customized" WebDox Remote™ software (i.e. the UPN/URL Registration Application) the manufacturer would like downloaded to its client computer system 13 (e.g. WebDox Remote with UPN/URL Database and CGI for MacOS  
10 WebServer, WebDox Remote with UPN/URL Database and CGI for UNIX Web Server, or WebDox Remote with UPN/URL Database and CGI for NT Web Server). Once the manufacturer makes its selection, the customized WebDox Remote software is automatically downloaded to the manufacturer's client computer system 13. This downloaded  
15 software includes a computer program that automatically generates (on the manufacturer's) client subsystem, a relational database management system (RDBMS) which allows the manufacturer (or its agents) to easily construct and maintain a UPN/URL database (akin to that specified in Fig. 4A1) but restricted to containing information relating only to the  
20 manufacturer's products. Thus, when the manufacturer attempts to enter a UPC number into the manufacturer's UPN/URL database that does not contain the 6-digit Manufacturer Identification Number assigned to the manufacturer by the UCC, the RDBMS automatically blocks all such information entries. Consequently, the UPN/URL  
25 database can only maintain information pertaining to the registered manufacturer's products and information relating thereto on the Internet. As the manufacturer adds or removes products from its retail or wholesale line, the database administrator simply adds or removes

the UPC and URL information relating thereto from the RDBMS. As will be described in greater detail hereinafter, such database changes are periodically transmitted to the WebDox™ Server 30 so that the IPI Registrant Database (i.e. master UPN/URL database) of the system 5 (maintained on the IPD Servers thereof) can be updated in a timely manner.

Preferrably, the limited or restricted version of the UPN/URL database maintained by each registered manufacturer on its client subsystem 13 is connected to the manufacturer's Internet Server 12' by 10 a Common Gateway Interface program (CGI) 40, or other suitable means, as shown in Fig. 2. In this way, the manufacturer's limited version of the UPN/URL database can be made accessible to consumers world-wide from the manufacturer's Website which, in the illustrative embodiment, is assumed hosted on an Internet information server 12' that is similar 15 to an IPI Server 12 described in detail hereinabove. In order to simplify the process of serving of the manufacturer's limited-version of the UPN/URL database on the WWW, it is preferred that the CGI 40, and input and output forms and methods for searching and the displaying the results from the limited-version UPN/URL database are predesigned 20 for use with manufacturer's Internet Server 12' (taking into consideration its operating system and the like). This way, prior to registration the manufacturer need only make a selection of the type of customized WebDox Remote software it needs for its computing and Internet serving platform(s). Then, during software download, the 25 WebDox Server 30 simply transmits the suitable version of the customized WebDox Remote software to the manufacturer so that it can create, maintain and serve (on the WWW) its limited version of the UPN/URL database in a "turn-key" manner.

In the illustrative embodiment of the present invention, the homepage of each registered manufacturer's Website will display a visually conspicuous radio button labelled "UPC Request™ Product Finder" or the like. Moreover, whenever a consumer attempts to search the 5 manufacturer's limited-version UPN/URL database for products not registerable to the manufacturer (i.e. using UPC numbers not containing the manufacturer's 6-digit UCC Manufacturer Identification Number), the limited-version of the UPN/URL database will automatically display an HTML-encoded message from the manufacturer's Website, urging the 10 consumer to surf to the IPI Registrant Database of the system (maintained on the network of IPD servers 11). Preferably, such HTML-encoded messages will have a hot-linked URL (i.e. anchor) to Website(s) providing consumer access to the "master" UPN/URL database.

15 The WebDox Remote™ computer system 13 available to each registered manufacturer has both online and offline modes of operation. In the offline mode, the manufacturer responds to a UPN/URL Registration Request from the WebDox™ Server in the following manner. First the WebDox Remote™ software analyzes the limited-version of the 20 UPN/URL database that it has been currently created and maintained by the manufacturer or its designee. Thereafter, the WebDox software automatically creates a UPN/URL Registration Response document which contains a set of currently active URLs specifying the address location of Web-based information resources associated with each UPC-encoded 25 product of the manufacturer. Then, WebDox Remote™ program establishes an Internet connection with the WebDox™ Server, through a "Get/Send Mail" option. This delivers the UPN/URL Registration Response (document) to the WebDox™ Server 30 and retrieves any

documents which are waiting thereat for the manufacturer. These new documents are listed by WebDox Remote™ program and presented in the InBasket of the manufacturer's WebDox Remote™ computer system 13.

5        In the online mode, WebDox Remote™ (under the control of the Form Application) can also send UPN/URL Registration Request documents immediately. For very sensitive applications (i.e. Just-in-Time), this ensures that the UPN/URL Registration Response document is received at the WebDox™ Server 30 the moment that the manufacturer 10 completes the document.

In general, the WebDox™ Server 30 provides a high-volume document processing and mailboxing environment between the WebDox Server and the WebDox Remote™ system of each registered manufacturer. WebDox™ Server 30 performs: permanent storage and 15 tracking of all UPN/URL Registration Request documents sent and UPN/URL Registration Response documents received; automatic reconciliation of acknowledgments from WebDox Remote™ program; Automatic creation of user-friendly receipt messages to the manufacturer; "mailboxing" of outbound UPN/URL Registration 20 documents for retrieval by manufacturer; and automatic manufacturer and profile creation based on forms received from manufacturers. The WebDox™ Server 30 consists of online components that run as extensions to Microsoft's Internet Information Server (IIS) using the ISAPI interface. This provides higher performance and lower hardware 25 requirements than a conventional CGI Web Interface. Processing intensive tasks are performed asynchronously from the Web server. An integrated queuing and dispatching system manages the processing of documents and interaction with the corresponding application. For large

volume situations, the WebDox™ Server components can be deployed on different machines, the WebDox™ Server components (ISAPI extensions) on one machine, the processing components and database on another machine.

5        Data for UPN/URL Registration Request documents to be sent to manufacturers is extracted from the IPI Registrant Database using an interface or utility program. The document data (e.g. information fields associated with UPN/URL registration) can then be accepted by WebDox in a direct manner after formatting. The UPN/URL Registration Request  
10      document should be formatted to a file structure created during the design of the UPN/URL Registration Application. The WebDox™ Server 30 then converts the application data into a UPN/URL Registration request document (i.e. data package). The data package for each manufacturer is then stored (as a message) in an assigned Mailbox of  
15      the WebDox™ Server 30. These messages are then available to be retrieved by the registered manufacturers using WebDox Remote's™ "Get/Send Mail" feature.

As discussed above, the WebDox Remote™ program transmits messages (e.g. UPN/URL Registration Response documents) to the  
20      WebDox™ Server 30, where, after passing security checks, they are placed in the WebDox Mailbox system. Incoming (document) messages are received from the Mailbox, processed, and converted into data files for direct transfer to the database management system handling the IPI Registrant Database.

25      For each document received, the WebDox™ Server 30 will return a message to the manufacturer confirming receipt of the document. WebDox Remote™ system also returns delivery confirmations to the WebDox Server. These messages are used by the WebDox™ Server to

track the status of messages. WebDox™ Server 30 maintains Mailbox Files for all inbound and outbound messages. The status of messages is updated on an ongoing basis as acknowledgement messages are received allowing timely and precise audits.

5        WebDox Admin™ Computer system 31 provides an easy-to-use tools to manage the community of manufacturers, review the status of documents, and configure the WebDox™ Server 30, including: ad hoc maintainence of manufacturer information; online display of the Mailbox permitting inquiry into document status or document activity  
10      for particular manufacturers, and the ability to reset document status; creation and maintainence of UPN/URL Registration Profiles; preparation of "releases" of new and updated UPN/URL Registration Applications; Distribution of new and updated UPN/URL Registration Applications; and automatic inventory and tracking of UPN/URL Registration  
15      Applications distributed to manufacturers.

      In the preferred embodiment, UPN/URL Registration Application design and development is carried out on a Windows 95 or NT workstation. The UPN/URL Registration Application is developed, tested, and then fully implemented for production with manufacturers.  
20      New or updated UPN/URL Registration Applications are registered with the WebDox Admin™ computer system 31 and are then distributed to the manufacturers as described herein above.

      In the preferred embodiment, UPN/URL Registration Applications are developed using Microsoft Visual Basic™ and related software tools.  
25      These products provide rapid design and creation of the screen-based forms that the manufacturer uses. In addition, the "intelligence" behind the form, in the UPN/URL Registration Application, can be very powerful, making the manufacturer's work easier while ensuring that

the user and Server application receive high quality data.

The WebDox Admin™ system handles the distribution of UPN/URL Registration Applications to manufacturers. New UPN/URL Registration Applications can be sent to some or all of the existing manufacturers 5 assigned UPC Manufacturer Identification Numbers. Updates to UPN/URL Registration Applications can be sent to manufacturers who are currently using that UPN/URL Application. The actual update is distributed by sending a small notification message to each manufacturer, which then results in the remote site downloading the 10 new forms from the WebDox™ Server 30, as hereinbefore described above.

#### Manufacturer Website Search Mode Of Operation

Referring to Fig. 5B, the high level structure is shown for a 15 communication protocol that can be used among a client subsystem  $C_a$ , an IPD Server  $S_b$ , and an IPI Server  $S_c$  of the IPI finding and serving subsystem hereof when it is induced into the Manufacturer Website Search Mode of operation from the point of view of the depicted client subsystem. Fig. 6B provides a high level flow chart illustrating the 20 steps involved in carrying out this communication protocol when the IPI Finding and Serving Subsystem is in its Manufacturer Website Search Mode of operation.

As indicated at Block A in Fig. 6B, when selected from the user-interface of a bar-code driven IPI Website, the second Check Box type 25 button 21B automatically activates the Manufacturer Website Search Mode of the IPI Finding and Serving Subsystem by sending an HTTP request to the IPD Server(s) 11 based on a URL hot-linked to the selected Check Box. As indicated at Block B in Fig. 6B, this causes a

particular type of HTML-encoded document (i.e. called an "HTML form" or "Web form document") residing on the IPD Server(s) 11 to be sent to the Web browser of the requesting client subsystem 13 and displayed on the information display frame 20C thereof (requesting this mode of service). As in the Manufacturer Website Search Mode described above, the HTML form sent in the Manufacturer Website Search Mode may also use any HTML format commands, such as headers, paragraphs, and lists, but must include three unique items, namely: the METHOD by which the user input is to be sent; the ACTION, which specifies a URL to which the user input is to be sent, presumably, a CGI script within CGI 11B that will act upon the request appropriately; and a SUBMIT button, to send the completed form over the Internet via HTTP. In the illustrative embodiment, user input (i.e. a UPC or EAN number associated with a particular consumer product) is obtained by an Input Box, which allows the user (i.e. retail sales clerk or consumer) to type in or scan in a UPC or EAN number assigned to a consumer product on which product related information is sought.

As indicated at Block C in Fig. 6B, the consumer or retail clerk scans the bar coded consumer product, or enters the UPC or EAN number thereon into the Input Box of the HTML form, and selects the SUBMIT button thereon. In response thereto, the Web browser on the client subsystem 13 sends a GET request to the HTTP Server 11C of the IPD Server 11. When selecting the SUBMIT button on the HTML form, the Web browser executes the METHOD associated with the HTML form and sends the stored UPC (or EAN) value to the URL specified by ACTION associated with the HTML form (i.e. the Web browser performs the action specified in the ACTION). The ACTION of the HTML form specifies the URL of the CGI script within CGI 11B that will process the

request from the HTML form. This amounts to the Web browser constructing a GET request for that URL, with the arguments (the query string) being attached to the end of the URL. The arguments of the HTML form are specified by the INPUT items of the HTML form (i.e. the 5 UPC or EAN number on the consumer product on which information is sought).

In general, the HTTP and HTML protocols provide three ways to pass the input (e.g. UPC or EAN number) from the users to scripts on the IPD Server 11 (i.e. HTTP Server). All three methods accomplish the same 10 thing: they allow the Web browser to pass information to a script on the IPD Server 11. A script may use any of the three methods, and some really robust Web gateways (CGI) 11B are able to deal with Web clients 13 that use any of the three methods. The way these methods are implemented on the HTTP Server 11 depends on the specific operating 15 system that it uses, and is defined as part as the system-specific CGI 11B. The same HTML form used in this mode might cause completely different things to happen on two different servers, but it would produce the same result for the user.

The first method, used in the illustrative embodiment, passes the 20 scanned UPC or EAN number (input) as part of a GET request, attached to the end of the URL after a question mark "?". This convention means that what follows the "?" is a query, and (on a UNIX-based server) is copied into the environment variable QUERY\_STRING by the HTTPD Server 11C before calling the CGI script. When the script executes, it 25 gets the query string from this environment variable. The query string consists of a series of terms, each of which is a name and a value, e.g. EAN=9781558603769, having a single term and single value. In the case where the query string consists of two or more terms, then each

term is separate by the character :"&".

The second way that the scanned UPC or EAN number can be sent from the Web browser of the client subsystem 13 to the HTTP Server 11C is with a path extension. In this convention, the client subsystem 5 sends a GET request for the URL of the Web script 11B, with the extra information attached to the URL as if it were part of a longer name. The HTTP (httpd) program 11B discovers this extra path and calls the script with the environment variable PATH\_INFO set to the extra characters.

The third way to pass information to the server is through the 10 POST method. When used with a script, the input UPC or EAN number from the HTML form is sent from the Web browser of the client subsystem 13 to the HTTP Server 11C as an HTTP object. This means that the client subsystem may send information to the HTTP Server 11C in the same way as the HTTP server sends the information to the client 15 subsystem, which could be a full HTML document. When the POST method is used on a UNIX-based system, the information from the Web browser of the client subsystem is passed to the Web script 11B through standard input, rather than an environment variable.

The above three ways of passing information from users of client 20 subsystems 13 to the CGI scripts 11B on the IPD Server 11 of the system hereof are specified in the HTML, HTTP and CGI standards, and depend on the specific operating system that the HTTP Server 11B. The details of how the CGI script must be written and how the input UPC or EAN number from the HTML form is received are drastically different 25 for Macintosh, Microsoft Windows NT, and the UNIX platforms. All of the events described above must happen on each of these platforms, but the way they happen is completely different on different computing platforms. These differences are specified in the CGI standard for each

operating system. These differences should not be apparent to the Web browser program of the client subsystems or the users thereof, but will matter to the creators of the CGI script 11B.

As indicated at Block D in Fig. 6C, the HTTP (httpd) program 11C 5 passing the arguments (the UPC or EAN numbers in the query string) to the CGI program 11B and the CGI script translates the query string into a proper query for use in searching the RDBMS 11A of the IPD Server 11. As indicated at Block E in Fig. 6C, the translated query is used to search the RDBMS 11A in order to find the set of URLs pointing to HTML 10 documents (i.e. Web Pages) published on the Internet and containing information relating to the consumer product having the input UPC or EAN number. The result returned from the RDBMS 11A is an ASCII record specifying the the set of URLs pointing to HTML documents published on the Internet and containing information relating to the 15 consumer product having the input UPC or EAN number entered into the HTML form. In order for the Web browser of the requesting client subsystem to display the results of the database search using the UPC or EAN input, the ASCII record must be converted into a HTML document (i.e. output HTML form). As indicated at Block F in Fig. 6B, the CGI 11C 20 creates the elements of an output HTML form (Web output form), inserts the result from the RDBMS 11A into the output form, and sets the Content-type to be text/html. The CGI script may translate, filter, augmentand reformat the result from the database search in any way so long as the result is an HTML document or some format that the Web 25 browser of the client subsystem can display.

As indicated at Block G, the menu of URLs retrieved from the database search is displayed in the Web output form. At Block H, the consumer or retail sales clerk can link to a desired consumer product

related information resource (HTML document) by selecting from the information menu, the URL anchored to the information resource in the displayed information menu.

5 UPN-Directed Information Access Mode of Operation

Referring to Fig. 5C, the high level structure is shown for a communication protocol that can be used among a client subsystem C<sub>a</sub>, an IPD Server S<sub>b</sub>, and an IPI Server S<sub>c</sub> of the IPI finding and serving subsystem hereof when it is induced into the UPN-Directed Information

10 Access Mode of operation from the point of view of the depicted client subsystem. Fig. 6C provides a high level flow chart illustrating the steps involved in carrying out this communication protocol when the IPI Finding and Serving Subsystem is in its UPN-Directed Information Access Mode of operation.

15 As indicated at Block A in Fig. 6C, when selected from the user-interface of an IPI Website, the third Check Box type button 21C automatically activates the UPN-Directed Information Access Mode of the IPI Finding and Serving Subsystem by sending an HTTP request to the IPD Server(s) 11 based on a URL hot-linked to the selected Check  
20 Box.

As indicated at Block B in Fig. 6C, this causes a particular type of HTML-encoded document (i.e. called an "HTML form" or "Web form document") residing on the IPD Server(s) 11 to be sent to the Web browser of the requesting client subsystem 13 and displayed on the  
25 information display frame 20C thereof (requesting this mode of service). As in the Manufacturer Website Search Mode described above, the HTML form sent in the UPN-Directed Information Access Mode may also use any HTML format commands, such as headers, paragraphs, and lists,

but must include three unique items, namely: the METHOD by which the user input is to be sent; the ACTION, which specifies a URL to which the user input is to be sent, presumably, a CGI script within CGI 11B that will act upon the request appropriately; and a SUBMIT button, to send 5 the completed form over the Internet via HTTP. In the illustrative embodiment, user input (i.e. a UPC or EAN number associated with a particular consumer product) is obtained by an Input Box, which allows the user (i.e. retail sales clerk or consumer) to type in or scan in a UPC or EAN number assigned to a consumer product on which product 10 related information is sought.

As indicated at Block C in Fig. 6C, the consumer or retail clerk scans the bar coded consumer product, or enters the UPC or EAN number thereon into the Input Box of the HTML form, and selects the SUBMIT button thereon. In response thereto, the Web browser on the 15 client subsystem 13 sends a GET request to the HTTP Server 11C of the IPD Server 11. When selecting the SUBMIT button on the HTML form, the Web browser executes the METHOD associated with the HTML form and sends the stored UPC (or EAN) value to the URL specified by ACTION associated with the HTML form (i.e. the Web browser performs 20 the action specified in the ACTION). The ACTION of the HTML form specifies the URL of the CGI script within CGI 11B that will process the request from the HTML form. This amounts to the Web browser constructing a GET request for that URL, with the arguments (the query string) being attached to the end of the URL. The arguments of the 25 HTML form are specified by the INPUT items of the HTML form (i.e. the UPC or EAN number on the consumer product on which information is sought).

As indicated at Block D, the HTTP (httpd) program 11C passes the

arguments (the UPC or EAN numbers in the query string) to the CGI program 11B and the CGI script translates the Web query string into a proper query to the RDBMS 11A of the IPD Server 11.

As indicated at Block E, the translated query is used to search the

5 RDBMS 11A and find the set of URLs (i) linked to the registered consumer product (by the manufacturer or agent thereof) assigned the UPC or EAN number entered into the Input Box of the HTML form, and (ii) pointing to HTML (or FTP) documents on the WWW containing particular types of consumer product related information. The result

10 returned from the RDBMS 11A is an ASCII record specifying the set of URLs satisfying the above criteria. In order for the Web browser of the requesting client subsystem to display the results of the database search during this mode, the ASCII record must be converted into a HTML document (i.e. Web output form).

15 As indicated at Block F, the CGI script 11B creates the elements of an HTML document (Web output form), inserts the result from the RDBMS 11A into the Web output form, and sets the Content-type of this HTML document to text/html. In the illustrative embodiment, when the Web output form is displayed by the requesting client subsystem, a set

20 of URLs categorized by particular product information types is displayed on the information display frame 20C. Notably, this set of URLs points to particular types of consumer product related information registered within the RDBMS 11A of the system.

As indicated at Block G, the consumer or retail sales clerk can then

25 access and display any HTML document (Web page) located at a particular URL within the information menu by selecting the same using a touch screen, mouse, or other input selection device.

Trademark-Directed Search Mode Of Operation

Referring to Fig. 5D, the high level structure is shown for a communication protocol that can be used among a client subsystem C<sub>a</sub>, an IPD Server S<sub>b</sub>, and an IPI Server S<sub>c</sub> of the IPI finding and serving subsystem hereof when it is induced into the Trademark-Directed Search Mode of operation from the point of view of the depicted client subsystem. Figs. 6D1 through 6D23, taken together, provides a high level flow chart illustrating the steps involved in carrying out this communication protocol when the IPI Finding and Serving Subsystem is 10 in its Trademark-Directed Search Mode of operation.

As indicated at Block A in Fig. 6D1, when selected from the user-interface of an IPI Website, the fourth Check Box type button 21D automatically activates the Trademark-Directed Search Mode of the IPI Finding and Serving Subsystem by sending an HTTP request to the IPD 15 Server(s) 11 based on a URL hot-linked to the selected Check Box.

As indicated at Block B in Fig. 6D1, this causes a particular type of HTML-encoded document (i.e. called an "HTML form" or "Web input form document") residing on the IPD Server(s) 11 to be sent to the Web browser of the requesting client subsystem 13 and displayed on the 20 information display frame 21C thereof (requesting this mode of service). As in the UPN-Directed Information Access Mode described above, the HTML form sent in the Trademark-Directed Search Mode may also use any HTML format commands, such as headers, paragraphs, and lists, but must include three unique items, namely: the METHOD by which the 25 user input is to be sent; the ACTION, which specifies a URL to which the user input is to be sent, presumably, a CGI script within CGI 11B that will act upon the request appropriately; and a SUBMIT button, to send the completed form over the Internet via HTTP. In the illustrative

embodiment, user input (i.e. the trademark or tradename used with a particular consumer product on which information is sought) is obtained by an Input Box, which allows the user (i.e. retail sales clerk or consumer) to type in the trademark or tradename believed or otherwise 5 known to be used in connection with a particular consumer product on which information is sought.

As indicated at Block C in Fig. 6D1, the consumer or retail clerk enters the trademark or tradename into the Input Box of the HTML form, and selects the SUBMIT button thereon. In response thereto, the 10 Web browser on the client subsystem 13 sends a GET request to the HTTP Server 11C of the IPD Server 11. When selecting the SUBMIT button on the HTML form, the Web browser executes the METHOD associated with the HTML form and sends the stored trademark value to the URL specified by ACTION associated with the HTML form (i.e. the 15 Web browser performs the action specified in the ACTION). The ACTION of the HTML form specifies the URL of the CGI script within CGI 11B that will process the request from the HTML form. This amounts to the Web browser constructing a GET request for that URL, with the arguments (the query string) being attached to the end of the URL. The arguments 20 of the HTML form are specified by the INPUT items of the HTML form (i.e. the trademark or tradename used in connection with the consumer product on which information is sought).

As indicated at Block D in Fig. 6D1, the HTTP (httpd) program 11C passes the arguments (the trademark or tradename in the query string) 25 to the CGI program 11B and the CGI script translates the Web query string into a proper query to the RDBMS 11A of the IPD Server 11.

As indicated at Block E in Fig. 6D1, the translated query is used to search the RDBMS 11A in order to find all registered consumer products

having product descriptions (PD) registered within the RDBMS that are related to the trademark or tradename entered into the Input Box of the HTML form. The result returned from the RDBMS 11A is an ASCII record specifying each triplet data set (Product Description, UPN and

5 Manufacturer) which satisfies the above trademark search criteria (to a particular degree) entered into the Input Box of the HTML form. In order for the Web browser of the requesting client subsystem to display the results of the database search during this mode, the ASCII record must be converted into another HTML form for use in refining the

10 consumer product information search.

At Block F in Fig. 6D2, the CGI script 11B creates the elements of another HTML document (Web auxillary input form), inserts the preliminary search result from the RDBMS 11A into the Web auxillary input form, and sets the Content-type of this HTML document to

15 text/html. In the illustrative embodiment, the Web auxillary-input form has an ACTION which specifies the URL of a CGI script within CGI 11B that will act upon the request appropriately as if the system where in UPN-Directed Information Access Mode. The Web auxillary input form includes an Input Box listing all triplet data sets (i.e. Product

20 Description, Manufacturers and UPN number) satisfying the input trademark search criteria entered in the primary Web input document, described hereinabove. The qualifying triplets listed in the Input Box are provided with a Radio-Button to allow the consumer or retail sales clerk to select one of the triplets from the list thereof for use in a

25 subsequent refined search of the RDBMS 11A. The Web auxillary-input form also has a SUBMIT button for sending the HTML form back to the HTTP Server 11C for processing.

As indicated at Block G in Fig. 6D2, when the consumer or retails

sales clerk makes a selection with the Radio-Button and then selects the SUBMIT button, the Web browser on the client subsystem 13 sends a request to the HTTP program 11C of the IPD Server 11 to get the completed HTML form.

- 5        As indicated at Block H in Fig. 6D2, the HTTP (httpd) program 11C passes the arguments (the trademark or tradename in the query string) to the CGI program 11B, and the CGI script translates the Web query string into a proper query for use in searching RDBMS 11A of the IPD Server 11. At Block I in Fig. 6D2, the query is used to search the RDBMS 10 11A in order to find the set of URLs (i) related to the registered consumer product (by the manufacturer or agent thereof) assigned the UPN, (Product Description and Manufacturer) entered into the Input Box of the HTML (auxillary) form, and (ii) pointing to HTML (or FTP) documents on the WWW containing particular types of consumer 15 product related information. The result returned from the RDBMS 11A is an ASCII record specifying the set of URLs satisfying the above criteria. In order for the Web browser of the requesting client subsystem to display the results of the database search during this mode, the ASCII record must be converted into a HTML document (i.e. 20 Web output form).

At Block J in Fig. 6D2, the CGI script 11B creates the elements of an HTML document (Web output form), inserts the result from the RDBMS 11A into the Web output form, sets the Content-type of this HTML document to text/html, and send the HTML form to the 25 requesting client subsystem.

At Block K in Fig. 6D3, the set of URLs categorized by particular product information types is displayed within the output HTML form on the information display frame 20C. Notably, this set of URLs points to

particular types of consumer product related information registered within the RDBMS 11A of the system by the manufacturer of the product or its agent(s) thereof using the UPN/URL management tools accessible during the Manufacturer/Product Registration Mode hereof.

5 As indicated at Block L in Fig. 6D3, the consumer or retail sales clerk can access and display any HTML document (Web page) located at a particular URL within the displayed information menu by selecting the same using a touch screen, mouse, or other input selection device available at the requesting client subsystem 13.

10

#### Product-Description Directed Mode Of Operation

Referring to Fig. 5E, the high level structure is shown for a communication protocol that can be used among a client subsystem C<sub>a</sub>, an IPD Server S<sub>b</sub>, and an IPI Server S<sub>c</sub> of the IPI Finding and Serving Subsystem hereof when it is induced into the Product-Description Directed Mode of operation from the point of view of the depicted client subsystem. Figs. 6E1 through 6E3 provides a high level flow chart illustrating the steps involved in carrying out this communication protocol when the IPI Finding and Serving Subsystem is in its Product-Description Directed Mode of operation.

As indicated at Block A in Fig. 6E1, when selected from the user-interface of an IPI Website, the fifth Check Box type button 21E automatically activates the Product-Description Directed Search Mode of the IPI Finding and Serving Subsystem by sending an HTTP request to the IPD Server(s) 11 based on a URL hot-linked to the selected Check Box.

As indicated at Block B in Fig. 6E1, this causes a particular type of HTML-encoded document (i.e. called an "HTML form" or "Web input

form document") residing on the IPD Server(s) 11 to be sent to the Web browser of the requesting client subsystem 13 and displayed on the information display frame 21C thereof (requesting this mode of service). As in the Trademark-Directed Search Mode described above, the HTML 5 form sent in the Product-Description Directed Search Mode may also use any HTML format commands, such as headers, paragraphs, and lists, but must include three unique items, namely: the METHOD by which the user input is to be sent; the ACTION, which specifies a URL to which the user input is to be sent, presumably, a CGI script within CGI 11B that 10 will act upon the request appropriately; and a SUBMIT button, to send the completed form over the Internet via HTTP. In the illustrative embodiment, user input (i.e. the description or descriptor for a particular consumer product on which information is sought) is obtained by an Input Box, which allows the user (i.e. retail sales clerk or 15 consumer) to type in the product description for a particular consumer product on which information is sought.

As indicated at Block C in Fig. 6E1, the consumer or retail clerk enters the product description into the Input Box of the HTML form, and selects the SUBMIT button thereon. In response thereto, the Web 20 browser on the client subsystem 13 sends a GET request to the HTTP Server 11C of the IPD Server 11. When selecting the SUBMIT button on the HTML form, the Web browser executes the METHOD associated with the HTML form and sends the stored product description to the URL specified by ACTION associated with the HTML form (i.e. the Web 25 browser performs the action specified in the ACTION). The ACTION of the HTML form specifies the URL of the CGI script within CGI 11B that will process the request from the HTML form. This amounts to the Web browser constructing a GET request for that URL, with the arguments

(the query string) being attached to the end of the URL. The arguments of the HTML form are specified by the INPUT items of the HTML form (i.e. the product description for the consumer product on which information is sought).

5 As indicated at Block D in Fig. 6E1, the HTTP (httpd) program 11C passes the arguments (the product description in the query string) to the CGI program 11B and the CGI script translates the Web query string into a proper query to the RDBMS 11A of the IPD Server 11.

As indicated at Block E in Fig. 6E1, the translated query is used to  
10 search the RDBMS 11A in order to find all registered consumer products having trademarks or tradenames within the RDBMS that are linked to the product description entered into the Input Box of the HTML form. The result returned from the RDBMS 11A is an ASCII record specifying each triplet data set (Trademark, UPN and Manufacturer) which satisfies  
15 the above product-description search criteria (to a particular degree) entered into the Input Box of the HTML form. In order for the Web browser of the requesting client subsystem to display the results of the database search during this mode, the ASCII record must be converted into another HTML form for use in refining the consumer product  
20 information search.

At Block F in Fig. 6E2, the CGI script 11B creates the elements of another HTML document (Web auxillary input form), inserts the preliminary search result from the RDBMS 11A into the Web auxillary input form, and sets the Content-type of this HTML document to  
25 text/html. In the illustrative embodiment, the Web auxillary-input form has an ACTION which specifies the URL of a CGI script within CGI 11B that will act upon the request appropriately as if the system were in UPN-Directed Information Access Mode. The Web auxillary input

form includes an Input Box listing all triplet data sets (i.e. Trademark, Manufacturer, and UPN number) satisfying the input product-description search criteria entered in the primary Web input document, described hereinabove. The qualifying triplets listed in the Input Box 5 are provided with a Radio-Button to allow the consumer or retail sales clerk to select one of the triplets from the list thereof for use in a subsequent refined search of the RDBMS 11A. The Web auxillary-input form also has a SUBMIT button for sending the HTML form back to the HTTP Server 11C for processing.

10 As indicated at Block G in Fig. 6E2, when the consumer or retail sales clerk makes a selection with the Radio-Button and then selects the SUBMIT button, the Web browser on the client subsystem 13 sends a request to the HTTP Server 11C of the IPD Server 11.

As indicated at Block H in Fig. 6E2, the HTTP (httpd) program 11C 15 passes the arguments (the product description in the query string) to the CGI program 11B, and the CGI script translates the Web query string into a proper query for use in searching RDBMS 11A of the IPD Server 11.

At Block I in Fig. 6E2, the query is used to search the RDBMS 11A 20 in order to find the set of URLs (i) linked to the registered consumer product (by the manufacturer or agent thereof) assigned the UPN, (Trademark and Manufacturer) entered into the Input Box of the HTML (auxillary) form, and (ii) pointing to HTML (or FTP) documents on the WWW containing particular types of consumer product related 25 information. The result returned from the RDBMS 11A is an ASCII record specifying the set of URLs satisfying the above search criteria. In order for the Web browser of the requesting client subsystem to display the results of the database search during this mode, the ASCII record

must be converted into a HTML document (i.e. output HTML form).

At Block J in Fig. 6E2, the CGI script 11B creates the elements of an output HTML form, inserts the result from the RDBMS 11A thereinto, and sets the Content-type of this HTML document to text/html and send 5 a request to the HTTP 11C to get the HTML form.

At Block K in Fig. 6E3, the set of URLs categorized by particular product information types is displayed within the output HTML form on the information display frame 20C. Notably, this set of URLs points to particular types of consumer product related information registered 10 within the RDBMS 11A of the system by the manufacturer of the product or its agent(s) thereof using the UPN/URL management tools accessible during the Manufacturer/Product Registration Mode hereof.

As indicated at Block L in Fig. 6E3, the consumer or retail sales clerk can access and display any HTML document (Web page) located at 15 a particular URL within the displayed information menu by selecting the same using a touch screen, mouse, or other input selection device available at the requesting client subsystem 13.

The protocols described above can be realized using any suitable programming language including, for example, an object-oriented 20 programming language such as the Java™ programming language.

#### Registration Solicitation Mode Of The IPI Finding and Serving Subsystem

In the illustrative embodiments of the present invention, the data-synchronized IPD Servers of the system hereof are also provided 25 with an "Automated Registration Solicitation Mode" programmed by the webmaster (or administrator) of the IPI Web-site(s). In this mode, each IPD Server analyzes the data collected within its Non-IPI Registrant Database. The data analysis procedure seeks to determine:

(1) which "unregistered" products in the Non-IPI Registrant Database were the subject of an information request at the IPD Server; (2) how many hits (requests) were made for the product within a predetermined length of time (e.g. one week) by Internet users; and (3) 5 whether the number of requests exceeds a particular "request threshold" (e.g. 100 requests in week period). Then for each unregistered product which has exceeded the request threshold, the IPD Server automatically sends an E-mail message to the associated company. Preferably, the E-mail message is designed to (i) inform the 10 company of recent information requests for their products, and (ii) solicit the registration of such products with the IPD Server. Once registered with the system, such products can be easily found on the Internet by anyone wishing to use the product information finding techniques of the present invention.

15

Operation of the IPI Finding and Serving Subsystem and Method Hereof

When the Check Box button 21C is selected from the control frame 20B, the IPI Finding and Serving Subsystem enters its "UPN-Directed Information Access Mode" illustrated in Fig. 6C. Preferably, the 20 user is provided with a choice of language (e.g. English, German, French, Japanese, Chinese, etc.) by way of an appropriate menu-selection screen. After the desired language selection is made, the home page is displayed upon the client subsystem's display screen. A typical display 25 screen produced from the IPD Server might read as follows:

"Welcome to UPC-REQUEST™, the only  
Universal Product-Information Finding and  
Serving System on the Internet.

5

Have you purchased a particular product, or considering the purchase of a particular product, on which you would like current, up-to-date information from the manufacturer or advertiser?

10

Look no further than the UPC-REQUEST™ Universal Product-Information Finding and Serving System."

15

20

25

30

When the subsystem is in its "UPN-Directed Information Access Mode", a Web-based information resource pertaining to any commercial product registered with the system can be displayed and selected by the user in order to automatically access the same from the Internet. Such information resources can include advertisements, specifications, operation descriptions, product simulations, purchase information, maintenance information, warranty and servicing information, product updates, distributor/reseller information, incentives (e.g. discounts, rebates, coupons, etc.), electronic data transaction screens, etc. In this mode, desired product information is obtained by simply entering the registered product's UPN (e.g. its UPC's 12 digit numerical string) into the Inout Box of the HTML form displayed in the information display frame 20C. Such data entry can be carried out manually using a keyboard data entry techniques, or automatically using an bar code symbol reader connected to the client subsystem as discussed in detail above. When using the seeded IPI Database described hereinabove, only the first six digits of the UPC number need be entered into the dialogue box. An exemplary display screen produced from the IPD Server might be as follows:

5

"Simply enter the 12 digit UPC the particular product; click REQUEST, and then wait for the display of the list of Web locators (URLs) at which the desired product information can be found on the Internet?"

10

In response to such data entry operations, a list or menu of URLs organized according to information subfield classifications as set forth, for example, in Fig. 4A2, are displayed on client subsystem C<sub>a</sub> making the request of the IPD Server. At this stage, another display screen associated with the HTML form produced from the the IPD Server would appear with an exemplary message as follows:

15

"Please select the URL from the displayed URL Menu using the information subfield product information category displayed above. This will connect you to the product information related to the selected URL. You can return to the URL display list at anytime."

20

Upon selecting a particular URL from the displayed URL menu, video and audio information content are automatically served from the IPI Server 12 hosting the selected URL and thereafter displayed on the client subsystem 13.

25

When the Check Box button 21D is selected, the IPI Finding and Searching Subsystem enters its Trademark-Directed Search Mode, illustrated in Figs. 6D1 through 6D3. Preferably, the user is provided with a choice of language (e.g. English, German, French, Japanese, Chinese, etc.) by way of an appropriate menu-selection screen.

When the system is in its Trademark-Directed Search Mode, a predesignated information resource pertaining to any commercial

product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser of a client subsystem 13. Such information resources can include advertisements, specifications, operation descriptions, 5 product simulations, product upgrade information, purchase information, maintenance information, warranty and servicing information, etc. In this mode, desired product information is obtained by simply entering the registered product's trademark(s) and/or associated company name into the Input Box of the HTML 10 form displayed on the information display frame 20C of the client subsystem. An exemplary message associated with the HTML form produced from the IPD Server 11 might be as follows:

15 "Simply enter the trademark used in connection with the particular product and/or the company name of the product's manufacturer; click REQUEST, and then wait for the display of a list of Web locators (URLs) at which desired types of product information can be found on the Internet?"

20 In response to such data entry operations, a list of URLs organized according to the information subfield classifications set forth in Fig. 4A2 are displayed on client subsystem placing the request. Upon selecting a particular URL from the displayed list 25 thereof, video and audio information content are automatically served from the IPI Server hosting the selected URL and thereafter displayed on the client subsystem.

In an alternative embodiment of the present invention, the UPN-Directed Information Access Mode and the Trademark-Directed 30 Search Mode can be integrated into a single server application so that

there is no need or desire to manually select between mode activation buttons 21C and 21D, respectively. In such an embodiment, the interaction between the IPD Server and the requesting client subsystem can be designed to support the following Web server display screens and script underlying the same:

5 "Welcome to UPC-REQUEST™, the only Universal Product-Information Finding and Serving System on the Internet.

10 Have you purchased a particular product, or considering the purchase of a particular product, on which you would like current, up-to-date information from the manufacturer or advertiser?

15 Look no further than the UPC-REQUEST™ Universal Product Information Finding and Serving System."

20 "Simply enter the 12 digit UPC number of the particular product, click REQUEST, and select from the displayed menu of Web locators (URLs) to find the desired product information on the WWW.

25 "If you do not know the UPC number associated with the product you are looking for, then simply enter the trademark used in connection with the particular product and/or the company name of the manufacturer, then click REQUEST, and wait for the display of the list of Web locators (URLs) at which the desired product information can be found?

30 "Please select the URL from the displayed URL list by clicking on it. This will connect you to the product information related to t h e

selected URL. You can return to the URL display list at anytime."

Notably, such an integrated Web server application can be realized in 5 a variety of ways. The exact words and graphics used to create an interactive script for an integrated Web server application will vary from embodiment to embodiment of the present invention.

In instances when an IPI Website in accordance with the present invention is being served to consumers in retail environments 10 using a computer-based kiosk as shown in Fig. 3A2, the consumer as well as retail sales clerk is presented with the option of ascertaining the price of an product in the store. This is achieved by simply depressing the "Price Display" button 21F on Control Strip 20B, shown in Fig. 3C, to engage the system in its price lookup/display mode. In 15 this mode of operation, the consumer then need only scan the UPC bar code symbol on the product using bar code scanner 26 in order for the price to be looked-up in the Product Price Database maintained in the Retailer's Price Server (RPS) 35, and displayed on the kiosk display screen. In general, the Product Price Database of the hosting 20 retailer can be made accessible by the computer-based kiosk in several possible ways. As shown in Fig. 2, one way is to place the retailer's RPS on Internet (by using an HTTP server) and connect the RPS to the IPD Server 11 of the system by way of a CGI well known in the art. The CGI can be made accessible only by authorized client 25 subsystems (e.g. computer-based kiosks installed in the hosting retailer's store and possibly administrators of the information delivery system of the present invention). An alternative technique of connecting the Product Price Database to each computer-based kiosk would involve providing the RPS with a direct interface to each

computer-based kiosk in the hosting retailer's store(s). This alternative technique may require the use of computer networking technology well known in the art.

5        A Best Mode Embodiment of IPI Finding and Serving Subsystem Of The Present Invention

10        The IPI finding subsystem (i.e. system) of the present invention can be realized on the Internet in a variety of different ways. Each embodiment of the system will provide manufacturers, retailers, consumers and sponsors with various benefits hitherto unachievable using prior art systems and methodologies. A best mode embodiment of the system will now be described below with reference to Intent-to-Use (ITU) servicemarks that Applicant has sought to register under 15        the Lanham Act and ultimately use in reducing the Internet-based consumer product information finding system to commercial practice in the near future. The inventive subject matter hereindisclosed can be readily applied to carry out such an Internet-based information finding and delivery system.

20        According to the best mode embodiment, the IPI Finding and Serving Subsystem 2, referred to as the "UPC REQUEST™ Consumer Product Information Finding System" in Figs. 7 and 8 hereof, comprises an integration of several subsystems including, for example: the UPC REQUEST™ Manufacturer/Product Registration 25        Subsystem 33 (e.g. Web Document Server 30 and Workstation 31) including Web-based and Value Added Networks (VAN)-based infrastructure and processes 14 for supporting EDI and UPN/URL database management operations by manufacturers and/or their agents; the UPC REQUEST™ Database Management Subsystem 9

interfaced with the UPC REQUEST™ Manufacturer/Product Registration Subsystem 33; numerous UPC REQUEST™ kiosks (e.g. client subsystems 13) installed in retail stores, retail outlets and the like, each having a bar code symbol driven Internet browser providing access to the 5 Internet through an Internet Service Provider (ISP); and all of the Web-enabled client subsystems 13 located in consumer homes, in consumer offices and on the road, having access to the Internet through an ISP. While distributed geographically, these subsystems are integrated through the infrastructure of the Internet.

10 The function of the UPC REQUEST™ Manufacturer/Product Registration Subsystem 33 is two-fold: to enable qualified manufacturers to quickly and easily register their companies with the System (i.e. the UPC REQUEST™ Database Management Subsystem 9) by way of a Web-enabled computer system of their choice; and (2) 15 enable manufacturers and/or their agents to easily link, manage and update their UPC numbers and linked URLs using any Web-enabled computer system 13 running the EDI-based UPN/URL Database Management software (downloaded during manufacturer registration), and periodically transmit such updated information to 20 the UPC REQUEST™ Database Management Subsystem in order to update each manufacturer's information within the UPC REQUEST™ Database (i.e., IPI Database shown in Figs. 4A1 and 4A2).

25 The function of the UPC REQUEST™ Database Management Subsystem 9 is to maintain and update the UPC REQUEST™ Database (shown in Figs. 4A1, 4A2 and Figs. 4C through 4C4), which contains various information items regarding registered manufacturers, service-subscribing retailers, and registered consumer products including, for example, UPC (and/or UPC/EAN) numbers assigned to

consumer products and linked URLs pointing to published HTTP-encoded documents (i.e. Web pages) containing particular types of information related to such products.

Within the store of each retailer subscribing to the UPC REQUEST™ Consumer Information Service, the function of the UPC REQUEST™ kiosk is to provide consumer access to the UPC REQUEST™ Retailer Website (e.g. UPC REQUEST™ @ Wal-Mart, UPC REQUEST™ @ Home Depot, etc.). The UPC REQUEST™ Retailer Website served to kiosks with the retailer's store provides consumer access to UPN/URL information links relating only to those products sold by the retailer and maintained within the UPC REQUEST™ Database Management System by the manufacturer or agent thereof. If desired by the subscribing retailer, its UPC REQUEST™ Retailer Website can be freely served to customers over the Internet, e.g. accessible from a hot-link 10  
15 embedded somewhere in the retailer's Web-site.

Within the realm of the UPC REQUEST™ System 2, the function of the Web-enabled client computer system 13 of each consumer, wherever it may be located (e.g. at home, in the office or on the road), is to provide consumer access the UPC REQUEST™ Central Website 20 which is freely served over the Internet to any consumer having a Web-enabled computer system. Unlike each UPC REQUEST™ Retailer Website maintained by the the UPC REQUEST™ Database Management System, the UPC REQUEST™ Central Website provides consumer access to UPN/URL information links relating to every product maintained 25 within the UPC REQUEST™ Database Management System by every registered manufacturer. Any attempt by a consumer to access information from a particular UPC REQUEST™ Retailer Website regarding a product not sold in the retailer's store will automatically

result in a link over to the UPC REQUEST™ Central Website.

A Brief Description Of The UPC REQUEST™ Service

When installed in retail stores, the UPC REQUEST™ System  
5 provide will provide five revolutionary Internet-based consumer  
information services under the servicemarks HOME-PAGE™, INFO-  
LINK™, CYBER-SERVICE™, TRADE-MARK™ and PRODUCT-TYPE™,  
respectively. Each of these information services is accessible to  
consumers and sales clerks alike from a UPC REQUEST™ Retailer  
10 Website (e.g. UPC REQUEST™ @ Home Depot Website) accessed within a  
retail store, as well as from on the UPC REQUEST™ Central Website.

In the UPC REQUEST™ version of the IPI Finding and Serving  
Subsystem of the present invention, the INFO-LINK™ provision is  
supported during and enabled by Manufacturer/Product Registration  
15 Mode; the HOME-PAGE™ provision is supported during and enabled by  
the Manufacturer Website Search Mode; the CYBER-SERVICE™  
provision is supported during and enabled by UPN-Directed  
Information Access Mode; TRADE-MARK™ provision is supported  
during and enabled by the Trademark-Directed Search Mode; and  
20 PRODUCT-TYPE™ provision is supported during and enabled by the  
Product-Description Directed Search Mode. Each of these system  
modes have been described in great detail hereinabove.

To constantly remind the public at large of the "fee-paying"  
sponsors of the UPC REQUEST™ System, all Web pages displayed by  
25 the UPC REQUEST™ System in a retail store (e.g. on UPC REQUEST™ @  
Home Depot Website), or on the UPC REQUEST™ Central Website, will  
be displayed within a three-frame display "framework" comprising a  
sponsor frame, a control frame, and an information frame.

The "sponsor frame", located on the upper-most portion of the Internet browser screen, displays the sponsor's greeting such as, for example, "*Welcome to UPC REQUEST, sponsored by Visa and Federal Express*"

5        The "control frame", located on the left-most side of the Internet browser screen, will provide five mode activations buttons. The first mode activation button 21A enables consumers to request the INFO-LINK™ service. The second mode activation button 21B enables consumers to request the HOME-PAGE™ service. The third mode activation button 21C enables consumers to request CYBER-SERVICE™. 10        The fourth mode activation button 21D enables consumers to request TRADE-MARK™. The fifth mode activation button 21E enables consumers to request PRODUCT-TYPE™. A sixth button enables the download a free plug-in software module which automatically installs 15        a "Product Information" button on the graphical user interface of the consumer's Internet browser, so that the UPC REQUEST™ Central Website can be accessed anywhere in the world with a single click of the mouse button.

20        The "information frame", occupying the balance of the Internet browser screen, will display: all HTTP (i.e. Web) and FTP pages launched by in-store scanning of UPC-labelled products during HOME-PAGE™ or CYBER-SERVICE™; all HTTP and FTP pages launched by clicking on hypertext-links embedded within Web pages accessed through a particular UPC REQUEST™ Retailer Website in retail stores or 25        from the UPC REQUEST™ Central Website; as well as all information search and display (menu) screens served by a UPC REQUEST™ Retailer Website or the UPC REQUEST™ Central Website.

In retail stores subscribing to the UPC REQUEST™ System, HOME-

PAGE™ manufacturer's website search site will enable consumers to automatically access the WWW Home Page of any registered manufacturer by scanning the UPC (or UPC/EAN) bar code symbol on any product thereof using the bar code symbol reader associated with a UPC REQUEST™ kiosk. In general, the UPC REQUEST™ kiosk can be realized by any Web-enabled computer system 13 having an Internet browser program, on-line access to the UPC REQUEST™ Retailer Website, and optionally a touch-screen display panel. The UPC REQUEST™ kiosk may, however, be realized as an inexpensive Internet access terminal comprising a Web-enabled network computer (NC), an LCD touch-screen panel, and a laser scanning bar code symbol reader integrated within an ultra-compact housing that is mountable within diverse locations within retail stores. As shown in Fig. 3A5, the UPC REQUEST™ kiosk may also be integrated within a conventional Point Of Sale (POS) station having a laser scanning bar code symbol reader and a large rotatable LCD display panel. Being as easy to install as a telephone modem, UPC REQUEST™ kiosks of this design can be widely deployed throughout retail stores world-wide with minimal modifications to the preexisting information infrastructure.

At home, in the office, or on the road, HOME-PAGE™ enables consumers to automatically access the WWW Home Page of any registered manufacturer by entering the UPN (or UPC/EAN number) on any product into the search screen served up by a particular UPC REQUEST™ Retailer Website, or by the UPC REQUEST™ Central Website.

INFO-LINK™, carried out using EDI-based UPN/URL Database Management software (downloaded from Manufacturer/Product Registration Subsystem 33), enables manufacturers to simply relate (link), manage and update therein (i) the UPN (or UPC/EAN number)

on any product with (ii) the Internet address (i.e. URL) of product-related Web pages published on the Internet by the manufacturer, its agents, or others, for subsequent access and display by consumers using CYBER-SERVICE™. While the INFO-LINK™ service would be 5 made accessible through UPC REQUEST™ kiosks 13 in retail stores (i.e. for the sake of vendors who frequent the same), the actual UPN/URL information linking and management operations associated with the INFO-LINK™ service will typically occur in the "back-offices" of registered manufacturers using Internet-enabled computer systems 10 accessing INFO-LINK™ through a hot-linked URL posted on the UPC REQUEST™ Retailer Website and/or the UPC REQUEST™ Central Website.

CYBER-SERVICE™, accessible through a particular UPC REQUEST™ Retail Website or the UPC REQUEST™ Central Website, enables 15 consumers at home, in the office, on the road, and in retail stores, to quickly access particular types of product-related information which have been published on the WWW by registered manufacturers, their agents and others about consumer products registered with the UPC REQUEST™ Database Management System. CYBER-SERVICE™ displays 20 such product-related information in a menu-like format organized by particular information types (e.g., Product Advertisements, Product Endorsements, Product Reviews, Product Rebates and Incentives, Product Description, Product Manual/Instructions, Product Updates (at FTP Sites), Warranty and Repair Service, Direct Product Purchase, 25 Retailers, Wholesalers, Complementary Products, Company Annual Report, Stock Purchase, etc.). Each displayed information menu associated with a consumer product contains hyper-linked URLs pointing to HTTP-documents containing particular types of product-

related information linked to the product by the manufacturer or its agent.

When CYBER-SERVICE™ is selected from a particular UPC REQUEST™ Retail Website, each product-related Web page listed in the 5 displayed "information menu" can be accessed and displayed simply by touching the corresponding Internet address (i.e. URL) displayed on the touch-screen display panel of the UPC REQUEST™ kiosk in the retail store. When CYBER-SERVICE™ is selected from the UPC REQUEST™ Central Website, each product-related Web page listed in 10 the displayed "information menu" can be accessed and displayed simply by clicking the display screen thereof accessed by an Internet-enabled computer system.

TRADE-MARK™, accessible through a particular UPC REQUEST™ Retail Website or the UPC REQUEST™ Central Website, enables 15 consumers to quickly access particular types of product-related information from the UPC REQUEST™ Database, by using the trademark or tradename of the related product. When this mode of service is requested, a search screen is displayed within the information frame so that the consumer or sales clerk can enter the 20 trademark or tradename for the related consumer product.

PRODUCT-TYPE™, accessible through a particular UPC REQUEST™ Retail Website or the UPC REQUEST™ Central Website, enables consumers to quickly access particular types of product-related information from the UPC REQUEST™ Database, by using a descriptive 25 term for the related product. When this mode of service is requested, a search screen is displayed within the information frame so that the consumer or sales clerk can enter a descriptive term for the related consumer product.

To maximize value to a particular retail store's customers, each UPC REQUEST™ Retail Website served at each retail store subscriber would be made accessible to consumers outside their retail stores (e.g. at home, in the office or on the road) by several Internet access methods including, for example: through a hot-linked URL posted on the retail store's Website, pointing to the UPC REQUEST™ Retail Website; through a publicly accessible URL, e.g. <http://www.upcrequest.com/> @ retail store; etc.

10 Benefits Provided To Sponsors Promoting The UPC REQUEST™ System

HOME-PAGE™ and CYBER-SERVICE™ will foster customer loyalty and patronage with sponsors by providing consumers with valuable product-related information before and after product purchases.

15 CYBER-SERVICE™ will provide sponsors with an economical and effective way of marketing products and services to their customers and shoppers worldwide.

20 HOME-PAGE™ will provide sponsors with valuable advertising space on the UPC REQUEST™ Central Website, for subleasing to retailers, manufacturers and business concerns.

INFO-LINK™ will provide sponsors with an effective way of promoting their products and/or services among manufacturers, retailers and consumers using the UPC REQUEST™ System.

25 Benefits Provided To Customers Using The UPC REQUEST™ System In Retail Stores

HOME-PAGE™ will allow customers to automatically access Home Page of any manufacturer's Website by simply scanning the UPC bar

code symbol on any product thereof at any UPC REQUEST™ information kiosk in a retailer's store.

5 CYBER-SERVICE™ will allow customers to quickly access (by touch-screen URL selection) particular types of product-related information that have been published on the World Wide Web (WWW) by manufacturers, their agents or others, and registered within the UPC REQUEST™ Database through INFO-LINK™.

10 TRADE-MARK™ will allow customers to quickly access product related information menus from the UPC REQUEST™ Database using trademarks or tradenames used in connection with the product on which information is being sought.

15 PRODUCT-TYPE™ will allow customers to quickly access product related information menus from the UPC REQUEST™ Database using descriptive terms related to the product on which information is being sought.

20 Benefits Provided To Customers Using The UPC REQUEST™ System At Home, In The Office, Or On The Road

HOME-PAGE™ will allow customers to automatically access the Home Page of any manufacturer's Website by simply entering the UPC (or UPC/EAN) number on any consumer product, into a UPC REQUEST™ search screen served from the UPC REQUEST™ Central Website and accessible to anyone using an Internet-enabled computer system at home, in the office, or on the road.

30 CYBER-SERVICE™ will allow customers to quickly access from the UPC REQUEST™ Database, particular types of product-related information that have been published on the WWW by manufacturers, their agents or others, and registered within the UPC

REQUEST™ Database through the INFO-LINK™ service.

TRADE-MARK™ will allow customers to quickly access product related information menus from the UPC REQUEST™ Database using trademarks or tradenames used in connection with the product on which information is being sought.

PRODUCT-TYPE™ will allow customers to quickly access product related information menus from the UPC REQUEST™ Database using descriptive terms related to the product on which information is being sought.

10

Benefits Provided To Retailers Providing UPC REQUEST™ System In Their Stores

HOME-PAGE™ and CYBER-SERVICE™ will foster customer loyalty and patronage with retailers by providing shoppers with valuable product-related information before and after product purchases.

CYBER-SERVICE™ will provide retailers with an economical and effective way of marketing its products to customers and shoppers within its stores.

20

CYBER-SERVICE™ will provide retail sales personnel with an opportunity to learn about a retailer's products by scanning the UPC bar code symbols on such products, and selecting product-related Web pages for in-store review and sales-training sessions whenever customer demand allows.

25

HOME-PAGE™ and CYBER-SERVICE™ will provide retailers with valuable advertising space in their stores for subleasing to manufacturers and others (e.g. local sponsors) in order to self-finance the store-wide delivery of the UPC REQUEST™ Service.

TRADE-MARK™ will allow sales clerks and customers to quickly

access product related information menus from the UPC REQUEST™ Database using trademarks or tradenames used in connection with the product on which information is being sought.

5 PRODUCT-TYPE™ will allow sales clerks and customers to quickly access product related information menus from the UPC REQUEST™ Database using descriptive terms related to the product on which information is being sought.

Proposed Revenue Model For the UPC REQUEST™ System

10 The UPC REQUEST™ System will generate revenue from at least four sources: Manufacturer Fees paid by manufacturers who want to register their products and product-related Web pages with the UPC REQUEST™ Database; Retailer Fees paid by retailers who want to provide bar code driven access to the UPC REQUEST™ System in retail stores; Sponsor Fees paid by Sponsors of the UPC REQUEST™ System; 15 and Advertiser Fees paid by advertisers on the UPC REQUEST™ Central Website.

20 Manufacturers desiring to register their consumer products and product-related Web pages within the UPC REQUEST™ Database would pay a one-time Manufacture Registration Fee, based on volume of sales. An annual maintenance fee may be desired or necessary. Minimally, such fees should cover the cost of the EDI and UPN/URL Database Management software (and updates) automatically downloaded to each manufacturer upon registration. Such Web-based 25 EDI software enables manufacturers to easily manage the UPC numbers and Web page URLs associated with their changing product lines, and automatically transmit such information to the UPC REQUEST™ Manufacturer/Product Registration Subsystem in order

that the UPC REQUEST™ Database Management Subsystem is periodically updated.

Retailers providing bar code driven access to the UPC REQUEST™ System in their retail stores would pay an annual Retailer License Fee 5 based on the number of UPC REQUEST™ kiosks deployed therein (within store isles, at POS stations and behind information/service counters).

Each sponsor of the UPC REQUEST™ System would pay an annual Sponsor Fee for the right to display its name, 10 trademark/servicemark and/or message in hypertext within a selected portion of the sponsor frame displayed by licensed UPC REQUEST™ kiosks in retail stores, as well as Internet-enable computer systems accessing the UPC REQUEST™ Central Website. For marketing reasons, it would be desirable to limit the number of sponsors of the 15 UPC REQUEST™ System at any instant in time.

Advertisers, who advertise on the UPC REQUEST™ Central Website, would pay an Advertiser Fee based on the time and location that the Web advertisement is displayed.

## 20 Usage Of The UPC REQUEST™ In Diverse Retail Markets

The UPC REQUEST™ System can be used to provide consumers quick access to useful product-related information in diverse types of retail shopping environments including, for example, retail 25 superstores, discount department stores, home-improvement stores, computer superstores, drugstores and pharmacies, music stores, video rental stores, bookstores, supermarkets, grocery stores and the like. Each of these retail markets provides a unique environment in which the UPC REQUEST™ System can be used by manufacturers of consumer

products to effectively deliver product-related information to consumers in retail stores, at home, in the office or on the road, before and after consumer purchases.

As the UPC REQUEST™ System provides manufacturers with an effective way and means of making direct contact with present and future customers, it enables both manufacturers and retailers alike to influence demand in ways that have hitherto have been unavailable. Such features of the UPC REQUEST™ System present enormous growth opportunities in retail supply and demand chain management across diverse markets within our ever expanding global economy.

#### Modifications of the Illustrative Embodiments of the Invention

The present invention has been described in great detail with reference to the above illustrative embodiments. It is understood, however, that numerous modifications will readily occur to those with ordinary skill in the art having had the benefit of reading the present disclosure.

For example, in the illustrative embodiments described hereinabove, separate databases are maintained by each data-synchronized IPD Server for (i) registered products within the system, and (ii) non-registered products within the system. Notably, the reasons for using a dual database design of this sort would be based largely on economics, namely: only those companies who have paid the required maintenance (or registration) fees get their products and linked-URLs "registered" with the system, whereas non-paying companies and organizations do not get their products and linked-URLs registered with the system, regardless of how such product-URL information is ascertained (e.g. by solicitation versus data-mining).

Thus it is contemplated that in some embodiments of the present invention, each IPD Server will be designed to maintain only a single database for maintaining product-URL information currently available on the Internet. In such embodiments of the present invention, the concept of "non-registered" products will be altogether avoided, since the system implementation and administration may be designed to not require companies to pay maintenance (or registration) fees in order that their products and linked URLs are registered with the IPI system. Instead, some alternative income producing scheme will be used in such embodiments of the present invention (e.g. user fees, subscription fees, Internet browser-licensing fees, etc.) for system maintenance and administration.

When practicing the system and method of the present invention, it is preferred that the UPC label (with its human-readable UPC number) assigned to the particular product be attached, embossed or otherwise embodied on an accessible surface thereof. In addition to applying the UPC label to the external packaging of the product, it is preferred that the UPC label also be printed on any and all product instructions and manuals provided with the product. In this way, the UPC number can be easily read by a human being and then used to access a desired type of product information using the system and method of the present invention.

In order that the system hereof can be used to find information pertaining to large products such as automobiles, motorcycles, skidoos, farm machinery, boats, etc., the present invention also contemplates assigning UPNs (e.g. UPC or EAN numbers) to such products and attaching, embossing or otherwise embodying the same on an accessible surface thereof. Also, the UPN label can be printed

on all instruction booklets and/or operating manuals normally provided with the product. In this way, information related to any particular product that is posted anywhere on the Internet and linked to URLs registered with the IPD Servers 11 of the system 5 hereof can be readily found using the uniquely assigned UPC number assigned thereto by the manufacturer at the time of sale. Notably multimedia information about such products can be most helpful in regard to the operation, repair and servicing of such products.

The system and method of the present invention has been 10 shown to combine the use of UPNs, trademarks and company names when making a product information request of the system. It is understood, however, that the present invention can be practiced using anyone of these items of information, alone or in combination with each other, in order to place a product information request with 15 the system hereof.

Also, while the system of the illustrative embodiment has been shown used to collect, transport and serve information related to consumer products, it is understood that the system can be used to link the URLs of HTML (and other Internet) documents with consumer 20 services assigned uniform service numbers (USN) which may be based on the UPC or EAN numbering system, or some other suitable system. In such alternative embodiments, the IPI Database would contain information pertaining to uniform service numbers (USN) that have been linked to the URLs of HTML or like documents on the 25 Internet by the manufacturer or its agents, in essentially the same manner as conducted for consumer products. Such USN/URL management operations can be carried out in a similar to that described in connection with UPN/URL management along the retail

supply and demand chain.

In connection with the consumer service information embodiment of the present invention, it is understood that at present, few (if any) services have been assigned a UPC (or EAN) number in the manner that nearly all consumer products have been assigned in the contemporary period. In spite of this fact, however, the present invention contemplates the need and utility of widespread assignment of UPC, EAN or similar numbers by service providers to particular services (as well as the imprinting of UPC, EAN or similar symbols on printed service brochures and advertisements. Notably, assigning uniform service numbers (USNs) to particular services, and labelling printed and graphical brochures and advertisements with such universal numbers, will provide a number of new opportunities hitherto unavailable.

In particular, service-related information could be easily found (i.e. located and accessed) on Web-sites using the system and method of the present invention, and thereafter the service easily procured through an electronic data transaction. In accordance with the present invention, this can be achieved by uniquely identifying and assigning "particular" services by a Universal Service Code (USC) which has many if not all of the attributes of a conventional UPC. While not necessary, a single digit may be optionally added to the USC in order to demark that services are being identified rather than products. An example of such USC labelling would be printing an assigned UPC label (number) on: admission tickets to a theatrical, dramatic or musical performance and/or its playbill; admission tickets to a movie; admission tickets to a concert and/or its concert program; admission tickets to a sporting event and/or its sports program;

admission tickets to an art, science or history museum; admission tickets to the zoo or botanical gardens; and the like. The UPC label would be encoded to identify a particular event at which an entertainment, educational or professional service is provided. The 5 UPC label printed on the tangible medium associated with the promotion of or access to the particular service would then be registered with the IPSI Registrant Database of the system hereof, along with the name of the provider of the service, and a list of URLs that identify the Web locations at which particular kinds of 10 information related to the particular service can be found (in accordance with the categories of Fig. 4A2).

These and all other such modifications and variations are deemed to be within the scope and spirit of the present invention as defined by the accompanying Claims to Invention.

CLAIMS TO INVENTION

1. A system of finding and serving information pertaining to a particular product on the Internet, said system comprising:

5 URL/UPN information storage means for storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on 10 the Internet related to a particular one of said products;

15 request servicing means for servicing a request made by a client subsystem, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product;

product-related information storage means for storing information related to said plurality of products; and

20 information delivery means, responsive to said request servicing means, for serving to said client subsystem, information related to one of said plurality of products specified by the URL symbolically linked to the UPN included in said request made by said client subsystem.

25 2. The system of claim 1, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

3. The system of claim 1, which further comprises said client

subsystem, wherein said client subsystem includes a Internet browser program having an on-screen product finder button which, when selected, results in a dialogue box requesting that the UPN associated with said request be entered into said client subsystem.

5

4. The system of claim 1, wherein said product related information is of a multi-media nature.

10 5. A method of finding and serving information pertaining to a particular product on the Internet, said method comprising the steps of:

15 (a) storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

(b) storing information related to said plurality of products;

20 (c) transmitting a request from a client subsystem, for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the UPN assigned to said product; and

25 (d) responding to said transmitted request and serving to said client subsystem, information related to one of said plurality of products specified by the URL symbolically linked to the UPN and included in said request made by said client subsystem.

6. The method of claim 5, wherein said UPN assigned to each said

product is a unique Uniform Product Code (UPC) number assigned to said product.

7. The method of claim 5, wherein step (c) comprises:

5        selecting a on-screen product finder button displayed by an Internet browser program running on said client subsystem, whereupon a dialogue box is displayed requesting that the UPN associated with the requested product be entered; and  
          entering said UPN into said dialogue box.

10

8. A system of finding and serving information pertaining to a particular product on the Internet, said system comprising:

15        URL/trademark information storage means for storing information representative of (i) a plurality of trademarks used in connection with a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of trademarks, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

20        request servicing means for servicing a request made by a client subsystem, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the trademark used in connection with said product; and

25        product-related information storage means for storing information related to said plurality of products; and

          information delivery means, responsive to said request servicing means, for serving to said client subsystem, information

related to one of said plurality of products specified by the URL symbolically linked to the trademark included in said request made by said client subsystem.

5 9. The system of claim 8, wherein each said trademark is registered with the United States Patent and Trademark Office in conjunction with said product .

10 10. A method of finding and serving information pertaining to a particular product on the Internet, said method comprising the steps of:

15 (a) storing information representative of (i) a plurality of trademarks used in connection with a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of trademarks, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

(b) storing information related to said plurality of products;

20 (c) transmitting from a client subsystem, a request for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the trademark used in connection with said product ; and

25 (d) responding to said transmitted request, and serving to said client subsystem, information related to one of said plurality of products specified by the URL symbolically linked to the trademark and included in said request made by said client subsystem.

11. The method of claim 10, wherein each said trademark is registered with the United States Patent and Trademark Office in

conjunction with said product .

12. The method of claim 10, wherein step (c) comprises:

5        selecting an on-screen product finder button displayed by an Internet browser program running on said client subsystem, whereupon a dialogue box is displayed requesting that the trademark and/or company name associated with the requested product be entered; and

10        entering said trademark and/or company name into said dialogue box.

13. An Internet-based consumer product information delivery system comprising:

15        means for enabling manufacturers and their agents to link (i.e. relate), manage and update within a database, the UPC (or EAN) numbers on their products and the Uniform Resource Locators (URLs) of HTTP-encoded documents containing particular kinds of consumer product-related information published on the Internet by said manufacturers, their agents and/or third parties; and

20        means for enabling consumers, in retail shopping environments, at home, in the office and on the road, to access said consumer product-related information from said database, using said UPC (or EAN) numbers and/or by scanning UPC (or EAN) bar code symbols encoded with said numbers.

25

14. A consumer product information finding system comprising:

      at least one kiosk installed within a retail shopping environment and each said kiosk includes

a bar code symbol reader for reading the UPC (or UPC/EAN) numbers on consumer products being offered for sale in the store, and

5 a LCD touch-type display screen for displaying product-related information accessed from hyper-linked Web-sites on the Internet.

10 15. The consumer product information finding system of claim 14, wherein said bar code symbol reader projects a 3-D laser scanning pattern over said LCD touch-screen panel.

15 16. The consumer product information finding system of claim 14, wherein said kiosk further comprises a telephone handset for carrying out telephone calls.

20 17. The consumer product information finding system of claim 14, wherein said kiosk further comprises a credit card transaction terminal for conducting consumer purchase transactions and other forms of electronic commerce while using said consumer product information finding system.

25 18. The consumer product information finding system of claim 14, wherein said bar code symbol reader has a cordless interface with said kiosk so that it may be moved about within said retail environment in a portable manner.

19. A method of providing consumer product information to

consumers in retail stores, at home, in the office or on the road, said method comprising the steps of:

(a) enabling manufacturers and their agents to link (i.e. relate), manage and update within a database, the UPC (and/or UPC/EAN) numbers on their products and the Uniform Resource Locators (URLs) of HTTP-encoded documents containing particular kinds of consumer product-related information published on the Internet by said manufacturers, their agents and/or third parties; and

(b) enabling consumers, in retail stores, at home, in the office or on the road, to access said consumer product-related information from said database, using said UPC (and/or UPC/EAN) numbers and/or by scanning UPC (or UPC/EAN) bar code symbols encoded with said numbers.

15 20. A consumer producing information finding and serving system comprising:

a Manufacturer/Product Registration Mode, wherein manufacturers can register their companies and UPNs and URLs related to consumer products within the system;

20 an UPN-Directed Information Access Mode, wherein consumers can access and display information menus containing UPC numbers linked to URLs pointing Web pages containing consumer product related information by scanning the UPC label on the consumer product or by entering the UPC number thereof into a data-entry 25 screen displayed by the system in this mode;

a Manufacturer Website Search Mode, wherein the home page of a manufacturer's Web-site can be automatically accessed and displayed by scanning the UPC label on any consumer product of the

manufacturer or by entering the UPC number thereof into a data-entry screen displayed by the system in this mode;

5 a Trademark-Directed Search Mode enabling consumers to use trademarks and/or tradenames associated with consumer products to search for consumer-product related information registered within the system; and

10 a Product-Description Directed Search Mode enabling consumers to use product descriptors associated with particular consumer products to search for consumer-product related information registered within the system.

21. A consumer producing information finding and serving system comprising:

15 a first subsystem, wherein manufacturers can register their companies and consumer products (e.g. UPC numbers and URLs) with the system; and

20 a second subsystem, wherein consumers can access and display information menus containing UPC numbers linked to URLs pointing Web pages containing consumer product related information by scanning the UPC label on the consumer product or by entering the UPC number thereof into a data-entry screen displayed by the system in this mode.

22. The consumer producing information finding and serving system  
25 of claim 21, which further comprises:

a third subsystem, wherein the home page of a manufacturer's Web-site can be automatically accessed and displayed by scanning the UPC label on any consumer product of the manufacturer or by

entering the UPC number thereof into a data-entry screen displayed by the system in this mode.

23. The consumer producing information finding and serving system  
5 of claim 22, which further comprises:

a fourth subsystem enabling consumers to use trademarks and/or tradenames associated with consumer products to search for consumer-product related information registered within the system.

10 24. The consumer producing information finding and serving system of claim 23, which further comprises:

a fifth subsystem enabling consumers to use product descriptors associated with particular consumer products to search for consumer-product related information registered within the system.

15 25. The system of claim 21, wherein a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the  
20 Internet browser by simply entering the registered product's UPN into the Internet browser manually or by bar code symbol scanning.

26. The system of claim 22, wherein, a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's trademark(s) and/or associated company name into the Internet  
25

browser.

27. The system of claim 24, wherein a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's product description into the Internet browser.

10 28. A consumer information management system enabling access to a predesignated information resource linked to a product assigned a Universal Product Number (UPN) by entering said UPN into an Internet enabled browser.

15 29. A system of finding information pertaining to a particular product on the Internet, comprising:  
a database server connected to the Internet and including  
URL/UPN information storage means for storing  
information representative of (i) a plurality of universal product  
20 numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products, and  
request servicing means for servicing a request made by a  
25 client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product; and

a plurality of product-information servers, each connected to the Internet and including

product-related information storage means for storing information related to said plurality of products, and

5 information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN included in said request made by said client system.

10

30. The system of claim 29 wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

15

31. The system of claim 29, which further comprises said client system, wherein said client system includes a Internet browser program having an on-screen product finder button which, when depressed, results in a dialogue box requesting that the UPN associated with said request be entered into said client system.

20

32. The system of claim 29, wherein said product related information is of a multi-media nature.

25

33. A method of finding information pertaining to a particular product on the Internet, comprising the steps of:

(a) storing in a database server connected to the Internet, information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a

plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

5 (b) storing in a plurality of product-information servers, information related to said plurality of products;

(c) transmitting to said database server from a client system, a request for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the UPN assigned to said product; and

10 (d) at least one said product information server responding to said request transmitted to said database server, and delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN and included in said request made by said client system.

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34. The method of claim 33, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

20

35. The method of claim 34, wherein step (c) comprises:

depressing a on-screen product finder button displayed by an Internet browser program running on said client system, whereupon a dialogue box is displayed requesting that the UPN associated with the requested product be entered; and

25

entering said UPN into said dialogue box.

36. A system of finding information pertaining to a particular product on the Internet, comprising:

a database server connected to the Internet and including

URL/trademark information storage means for storing information representative of (i) a plurality of trademarks used in connection with a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of trademarks, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products, and

request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the trademark used in connection with said product; and

a plurality of product-information servers, each connected to the Internet and including

product-related information storage means for storing information related to said plurality of products, and

information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the trademark included in said request made by said client system.

37. The system of claim 36, wherein each said trademark is registered with the United States Patent and Trademark Office in conjunction with said product.

38. A method of finding information pertaining to a particular product on the Internet, comprising the steps of:

(a) storing in a database server connected to the Internet, information representative of (i) a plurality of trademarks used in connection with a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of trademarks, each said URL 5 specifying the location of an information resource located on the Internet related to a particular one of said products;

(b) storing in a plurality of product-information servers, information related to said plurality of products;

(c) transmitting to said database server from a client system, a 10 request for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the trademark used in connection with said product; and

(d) at least one said product information server responding to 15 said request transmitted to said database server, and delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the trademark and included in said request made by said client system.

20 39. The method of claim 40, wherein each said trademark is registered with the United States Patent and Trademark Office in conjunction with said product.

40. The method of claim 38, wherein step (c) comprises:  
25 depressing a on-screen product finder button displayed by an Internet browser program running on said client system, whereupon a dialogue box is displayed requesting that the trademark and/or company name associated with the requested product be entered; and

entering said trademark and/or company name into said dialogue box.

41. A database server connected to the Internet comprising:

5 URL/UPN information storage means for storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on 10 the Internet related to a particular one of said products, and

request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of 15 the UPN assigned to said product.

42. The database server of claim 41, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

20

43. The database server of claim 41, wherein said product related information is of a multi-media nature.

44. A database server connected to the Internet comprising:

25 URL/trademark information storage means for storing information representative of (i) a plurality of trademarks used in connection with a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of trademarks, each said URL

specifying the location of an information resource located on the Internet related to a particular one of said products, and

request servicing means for servicing a request made by a client system, for information about one of said plurality of products 5 located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the trademark used in connection with said product.

45. The database server of claim 44, wherein said product related 10 information is of a multi-media nature.

4. A system of finding information pertaining to a particular service on the Internet, comprising:

15 a database server connected to the Internet and including URL/UPN information storage means for storing information representative of (i) a plurality of universal service numbers (UPNs) assigned to a plurality of services, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the 20 Internet related to a particular one of said services, and

request servicing means for servicing a request made by a client system, for information about one of said plurality of services located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of 25 the UPN assigned to said service; and

a plurality of service-information servers, each connected to the Internet and including

service-related information storage means for storing

information related to said plurality of services, and

5 information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of services specified by the URL symbolically linked to the UPN included in said request made by said client system.

10 47. The system of claim 46, wherein said UPN assigned to each said service is a unique Uniform Service Code (UPC) number assigned to said service.

15 48. The system of claim 46, which further comprises said client system, wherein said client system includes a Internet browser program having an on-screen service finder button which, when depressed, results in a dialogue box requesting that the UPN associated with said request be entered into said client system.

20 49. The system of claim 46, wherein said service related information is of a multi-media nature.

50. A method of finding information pertaining to a particular service on the Internet, comprising the steps of:

25 (a) storing in a database server connected to the Internet, information representative of (i) a plurality of universal service numbers (UPNs) assigned to a plurality of services, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said services;

(b) storing in a plurality of service-information servers, information related to said plurality of services;

5 (c) transmitting to said database server from a client system, a request for information about one of said plurality of services located on the Internet, wherein said request includes information representative of the UPN assigned to said service; and

10 (d) at least one said service information server responding to said request transmitted to said database server, and delivering to said client system, information related to one of said plurality of services specified by the URL symbolically linked to the UPN and included in said request made by said client system.

51. The method of claim 50, wherein said UPN assigned to each said service is a unique uniform service number assigned to said service.

15

52. The method of claim 50, wherein step (c) comprises:

depressing a on-screen service finder button displayed by an Internet browser program running on said client system, whereupon a dialogue box is displayed requesting that the UPN associated with 20 the requested service be entered; and

entering said UPN into said dialogue box.

53. A system of finding information pertaining to a particular service on the Internet, comprising:

25

a database server connected to the Internet and including URL/servicemark information storage means for storing information representative of (i) a plurality of servicemarks used in connection with a plurality of services, and (ii) a plurality of URLs

symbolically linked to said plurality of servicemarks, each said URL specifying the location of an information resource located on the Internet related to a particular one of said services, and

5 request servicing means for servicing a request made by a client system, for information about one of said plurality of services located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the servicemark used in connection with said service; and

10 a plurality of service-information servers, each connected to the Internet and including

service-related information storage means for storing information related to said plurality of services, and

15 information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of services specified by the URL symbolically linked to the servicemark included in said request made by said client system.

54. The system of claim 53, wherein each said servicemark is 20 registered with the United States Patent and Trademark Office or its foreign equivalent in conjunction with said service.

55. A method of finding information pertaining to a particular service on the Internet, comprising the steps of:

25 (a) storing in a database server connected to the Internet, information representative of (i) a plurality of servicemarks used in connection with a plurality of services, and (ii) a plurality of URLs symbolically linked to said plurality of servicemarks, each said URL

specifying the location of an information resource located on the Internet related to a particular one of said services;

(b) storing in a plurality of service-information servers, information related to said plurality of services;

5 (c) transmitting to said database server from a client system, a request for information about one of said plurality of services located on the Internet, wherein said request includes information representative of the servicemark used in connection with said service; and

10 (d) at least one said service information server responding to said request transmitted to said database server, and delivering to said client system, information related to one of said plurality of services specified by the URL symbolically linked to the servicemark and included in said request made by said client system.

15

56. The method of claim 55, wherein each said servicemark is registered with the United States Patent and Trademark Office or its foreign equivalent in conjunction with said service.

20

57. The method of claim 55, wherein step (c) comprises:

depressing a on-screen service finder button displayed by an Internet browser program running on said client system, whereupon a dialogue box is displayed requesting that the servicemark and/or company name associated with the requested service be entered; and

25

entering said servicemark and/or company name into said dialogue box.

58. A database server connected to the Internet comprising:

URL/UPN information storage means for storing information representative of (i) a plurality of universal service numbers (UPNs) assigned to a plurality of services, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL 5 specifying the location of an information resource located on the Internet related to a particular one of said services, and

request servicing means for servicing a request made by a client system, for information about one of said plurality of services located on the Internet, wherein said request is transmitted to said 10 Internet database server and includes information representative of the UPN assigned to said service.

59. The database server of claim 58, wherein said UPN assigned to each said service is a unique uniform service number assigned to said 15 service.

60. The database server of claim 58, wherein said service related information is of a multi-media nature.

20 61. A database server connected to the Internet comprising:

URL/servicemark information storage means for storing information representative of (i) a plurality of servicemarks used in connection with a plurality of services, and (ii) a plurality of URLs symbolically linked to said plurality of servicemarks, each said URL 25 specifying the location of an information resource located on the Internet related to a particular one of said services, and

request servicing means for servicing a request made by a client system, for information about one of said plurality of services

located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the servicemark used in connection with said service.

5 62. The database server of claim 61, wherein said service related information is of a multi-media nature.

63. A system of finding information pertaining to a particular product on the Internet, comprising:

10 a database server connected to the Internet and including URL/UPN information storage means for storing information representative of (i) a plurality of manufacturer identification numbers (MINs) assigned to a plurality of products made by a plurality of manufacturers, and (ii) a plurality of URLs 15 symbolically linked to said plurality of MINs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products, and

20 request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the MIN assigned to said product; and

25 a plurality of product-information servers, each connected to the Internet and including

product-related information storage means for storing information related to said plurality of products, and

information delivery means, responsive to said request servicing means, for delivering to said client system, information

related to one of said plurality of products specified by the URL symbolically linked to the MIN included in said request made by said client system.

5 64. The system of claim 63, wherein said MIN assigned to each said product is associated with an unique Uniform Product Code (UPC) number assigned to said product.

10 65. The system of claim 63, which further comprises said client system, wherein said client system includes a Internet browser program having an on-screen product finder button which, when selected, results in a Input Box requesting that the MIN associated with said request be entered into said client system.

15 66. The system of claim 63, wherein said product related information is of a multi-media nature.

67. A method of finding information pertaining to a particular product on the Internet, comprising the steps of:

20 (a) storing in a database server connected to the Internet, information representative of (i) a plurality of manufacturer identification numbers (MINs) assigned to a plurality of manufacturers of a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of MINs, each said URL specifying 25 the location of an information resource located on the Internet related to a particular one of said products;

(b) storing in a plurality of product-information servers, information related to said plurality of products;

5 (c) transmitting to said database server from a client system, a request for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the MIN assigned to said manufacturer of said product; and

10 15 (d) at least one said product information server responding to said request transmitted to said database server, and delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the MIN and included in said request made by said client system.

68. The method of claim 67, wherein said MIN assigned to each said manufacturer of a product is part of a unique Uniform Product Code (UPC) number assigned to said product.

15

69. The method of claim 67, wherein step (c) comprises:

10 20 selecting an on-screen product finder button displayed by an Internet browser program running on said client system, whereupon a Input Box is displayed requesting that the MIN associated with the requested product be entered; and

entering said MIN into said Input Box.

70. A service-related information material which comprises:

25 printed matter bearing information related to a particular service; and

a UPC (or EAN) number assigned to said particular service and printed on said printed matter.

71. The service-related information material of claim 70, wherein said printed matter comprises an admission ticket to a particular educational or entertainment event.

5      72. A product-related information brochure which comprises:  
          printed matter bearing information related to a product; and  
          a UPC (or EAN) number assigned to said particular product and  
          printed on said printed matter.

10     73. A system installable within a store, comprising:  
          an optical scanner for reading the UPC symbols on products  
          being offered for sale in the store;  
          means for accessing product-related information from Internet  
          Web-sites hyper-linked to scanned UPC symbols; and  
15     a display screen for visually displaying said product-related  
          information accessed from said hyper-linked Web-sites.

74. A system of finding information pertaining to a particular  
product on the Internet, comprising:  
20     a database server connected to the Internet and including  
          URL/UPN information storage means for storing  
          information representative of (i) a plurality of universal product  
          numbers (UPNs) assigned to a plurality of products, and (ii) a  
25     plurality of URLs symbolically linked to said plurality of UPNs, each  
          said URL specifying the location of an information resource located on  
          the Internet related to a particular one of said products, and  
          request servicing means for servicing a request made by a  
          client system, for information about one of said plurality of products

located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product; and

5 a plurality of product-information servers, each connected to the Internet and including

product-related information storage means for storing information related to said plurality of products, and

10 information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN included in said request made by said client system.

75. The system of claim 74, wherein said UPN assigned to each said 15 product is a unique Uniform Product Code (UPC) number assigned to said product.

76. The system of claim 74, which further comprises said client 20 system, wherein said client system includes a Internet browser program having an on-screen product finder button which, when selected, results in an Input Box requesting that the UPN associated with said request be entered into said client system.

77. A consumer product information accessing system installable 25 within a store, comprising:

an optical scanner for reading UPC (EAN or like) symbols on products being offered for sale in the store;

accessing means for accessing product-related information from

HTML documents whose location is specified by URLs and which are hyper-linked to said read UPC (EAN or like) symbols; and

a display screen for visually displaying said product-related information accessed from said hyper-linked HTML documents.

5

78. A system for collecting and transmitting product related information on the Internet, said system comprising:

a database management subsystem including

URL/UPN information storage means for storing product-related information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products; and

15 a database server connected to the Internet and said database management subsystem and including

product-related information receiving and storage means for receiving and storing said product-related information transitted from said database management subsystem.

20

79. The system of claim 78, wherein said database server further comprises:

25 request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product.

80. The system of claim 78, which further comprises:

a plurality of product-information servers, each connected to the Internet and including

5 product-related information storage means for storing information related to said plurality of products, and

information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN included in said request made by said

10 client system.

81. The system of claim 78, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

15

82. A database server connected to the Internet, comprising:

URL/UPN information storage means for storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

25 request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product; and

information serving means for serving to the client system

making said request, said information representative of the UPN assigned to said product.

83. The database server of claim 82, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

84. The database server of claim 82, wherein said product related information is of a multi-media nature.

10

85. A database server connected to the Internet comprising:

URL/trademark information storage means for storing information representative of (i) a plurality of trademarks used in connection with a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of trademarks, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the trademark used in connection with said product; and

information serving means for serving to the client system making said request, said information representative of the trademark used in connection with said product.

86. The database server of claim 85, wherein said product related information is of a multi-media nature.

87. An Internet-supported kiosk for use by consumers within a retail shopping environment, said Internet-supported kiosk comprising:

5        an optical scanner for reading UPC symbols on consumer products being offered for sale in said retail shopping environment;

      Internet access means for accessing a plurality of Internet-based information servers containing product-related information resources that are hyper-linked to UPC symbols on said consumer products; and

10        a display screen for visually automatically displaying said product-related information accessed from said Internet-based information servers in response to the reading of said UPC symbols by said optical scanner.

15        88. The Internet-supported kiosk of claim 87, wherein said optical scanner has a 3-D scanning volume which projects upon and intersects at least a portion of said display screen during bar code symbol reading operations.

20        89. A system for collecting and transmitting product related information on the Internet, said system comprising:

      a database management subsystem including

25        URL/UPN information storage means for storing product-related information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products; and

a database server connected to the Internet and said database management subsystem and including

product-related information receiving and storage means for receiving and storing said product-related information transitted from said database management subsystem.

90. The system of claim 89, wherein said database server further comprises:

request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product.

91. The system of claim 89, which further comprises:

a plurality of product-information servers, each connected to the Internet and including

product-related information storage means for storing information related to said plurality of products, and

information delivery means, responsive to said request servicing means, for delivering to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN included in said request made by said client system.

92. The system of claim 89, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

93. An information collection system for collecting consumer product related information from manufacturers over the Internet and transmitting said consumer product related information to an 5 Internet-based consumer product information finding and serving system, said information collection system comprising:

an information collecting server connected to the Internet and including

(1) message transmitting means for transmitting a 10 message over the Internet to a client system associated with a manufacturer, requesting that consumer product related information associated with each product of a manufacturer to be registered with said Internet-based consumer product information finding and serving system, be transmitted over the Internet to said information 15 collecting server, said consumer product related information being representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of consumer products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the 20 Internet related to a particular one of said consumer products, and

(2) information storage means for storing said consumer product related information; and

(3) information transmission means for transmitting said consumer product related information to said Internet-based 25 consumer product information finding and serving system for subsequent storage therein.

94. The information collection system of claim 93, which further

comprises a computer system interconnected to said information collecting server, for administrating the registration of consumer products of manufacturers with said Internet-based consumer product information finding and serving system.

5

95. A method of finding and serving information pertaining to a particular product on the Internet, said method comprising the steps of:

10 (a) storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

15 (b) storing information related to said plurality of products;

(c) transmitting a request from a client system, for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the UPN assigned to said product; and

20 (d) responding to said transmitted request and serving to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN and included in said request made by said client system.

25 96. The method of claim 95, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

97. A system of finding and serving information pertaining to a particular product on the Internet, said system comprising:

URL/UPN information storage means for storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular one of said products;

request servicing means for servicing a request made by a client system, for information about one of said plurality of products located on the Internet, wherein said request is transmitted to said Internet database server and includes information representative of the UPN assigned to said product;

product-related information storage means for storing information related to said plurality of products; and

information delivery means, responsive to said request servicing means, for serving to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN included in said request made by said client system.

98. The system of claim 97, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

25  
99. The system of claim 97, which further comprises said client system, wherein said client system includes a Internet browser program having an on-screen product finder button which, when

selected, results in an Input Box requesting that the UPN associated with said request be entered into said client system.

100. The system of claim 97, wherein said product related  
5 information is of a multi-media nature.

101. A method of finding and serving information pertaining to a particular product on the Internet, said method comprising the steps of:

10 (a) storing information representative of (i) a plurality of universal product numbers (UPNs) assigned to a plurality of products, and (ii) a plurality of URLs symbolically linked to said plurality of UPNs, each said URL specifying the location of an information resource located on the Internet related to a particular  
15 one of said products;

(b) storing information related to said plurality of products;

20 (c) transmitting a request from a client system, for information about one of said plurality of products located on the Internet, wherein said request includes information representative of the UPN assigned to said product; and

(d) responding to said transmitted request and serving to said client system, information related to one of said plurality of products specified by the URL symbolically linked to the UPN and included in said request made by said client system.

25

102. The method of claim 101, wherein said UPN assigned to each said product is a unique Uniform Product Code (UPC) number assigned to said product.

103. The method of claim 101, wherein step (c) comprises:  
5                    selecting a on-screen product finder button displayed by an Internet browser program running on said client system, whereupon an Input Box is displayed requesting that the UPN associated with the requested product be entered; and  
                  entering said UPN into said Input Box.

105. An Internet-based consumer product information delivery system comprising:

10                    means for enabling manufacturers and their agents to link (i.e. relate), manage and update within a database, the UPC (and/or UPC/EAN) numbers on their products and the Uniform Resource Locators (URLs) of HTTP-encoded documents containing particular 15 kinds of consumer product-related information published on the Internet by said manufacturers, their agents and/or third parties; and  
                  means for enabling consumers, in retail stores, at home, in the office and on the road, to access said consumer product-related information from said database, using said UPC (and/or UPC/EAN) 20 numbers and/or by scanning UPC (or UPC/EAN) bar code symbols encoded with said numbers.

106. A consumer product information finding system comprising:  
25                    at least one kiosk installed within a retail shopping environment and each said kiosk includes

                  a bar code symbol reader for reading the UPC (or UPC/EAN) numbers on consumer products being offered for sale in the store, and

a LCD touch-type display screen for displaying product-related information accessed from hyper-linked Web-sites on the Internet.

5 107. The consumer product information finding system of claim 106, wherein said bar code symbol reader projects a 3-D laser scanning pattern over said LCD touch-screen panel.

10 108. The consumer product information finding system of claim 106, wherein said kiosk further comprises a telephone handset for carrying out telephone calls.

15 109. The consumer product information finding system of claim 106, wherein said kiosk further comprises a credit card transaction terminal for conducting consumer purchase transactions and other forms of electronic commerce while using said consumer product information finding system.

20 110. The consumer product information finding system of claim 106, wherein said bar code symbol reader has a cordless interface with said kiosk so that it may be moved about within said retail environment in a portable manner.

25 111. A method of providing consumer product information to consumers in retail stores, at home, in the office or on the road, said method comprising the steps of:  
(a) enabling manufacturers and their agents to link (i.e. relate),

5 manage and update within a database, the UPC (and/or UPC/EAN) numbers on their products and the Uniform Resource Locators (URLs) of HTTP-encoded documents containing particular kinds of consumer product-related information published on the Internet by said manufacturers, their agents and/or third parties; and

10 (b) enabling consumers, in retail stores, at home, in the office or on the road, to access said consumer product-related information from said database, using said UPC (and/or UPC/EAN) numbers and/or by scanning UPC (or UPC/EAN) bar code symbols encoded with said numbers.

15 112. An Internet-based product information database subsystem which, for each commercially available consumer-product, stores number of information elements comprising: the name of the manufacturer; the Universal Product Code (UPC) assigned to the product by the manufacturer; and one or more URLs specifying the location of information resources (e.g. Web-pages) on the Internet relating to the UPC-labelled consumer-product..

20 113. The Internet-based product information database subsystem of claim 112, wherein the stored URLs are categorically arranged and displayed according to specific types of product information (e.g., product specifications and operation manuals; product wholesalers and retailers; product advertisements and promotions; product 25 endorsements; product updates and reviews; product warranty/servicing; related or complementary products; product incentives including rebates, discounts and/or coupons; etc.) that relates to the kind of information required, desired or otherwise

sought by consumers, wholesalers, retailers and/or trading partners; and product price at which the product is being offered for sale by a particular retailer.

5 114. An Internet-based product information database management subsystem which comprises:

a manufacturer-defined consumer-product directory that can be used by various persons along the retail supply and demand chain.

10 115. The Internet-based product information database management subsystem of claim 114, wherein the manufacturers of consumer-products are linked to the retailers thereof in the middle of the supply and demand chain by allowing either trading partner to access consumer-product information from the Internet-based product  
15 information database virtually 24 hours a day, seven days a week.

20 116. The Internet-based product information database management subsystem of claim 114, wherein consumer-product manufacturers, their advertisers, distributors and retailers are linked to the consumers of such products at the end of the supply and demand chain, by allowing such parties access consumer-product information from the Internet-based product information database subsystem virtually 24 hours a day, seven days a week.

25

117. A system wherein any type of consumer product can be registered with the system by symbolically linking or relating (i) its preassigned Universal Product Number (e.g. UPC or EAN number) or

at least the Manufacture Identification Number (MIN) portion thereof with (ii) the Uniform Resource Locators (URLs) of one or more information resources on the Internet (e.g. the home page of the manufacturer's Web-site) related to such products.

5

118. A Web-based document transport subsystem, wherein manufacturers as well as their advertisers and agents can register, within an Internet-based database, the UPNs (e.g. UPC numbers) of their products and the URLs of the information resources related to 10 such products.

119. A consumer product information finding and serving system comprising:

15 a Manufacturer/Product Registration Mode, wherein manufacturers can register their companies and consumer products (e.g. UPC numbers and URLs) with the system;

20 an UPN-Directed Information Access Mode, wherein consumers can access and display information menus containing UPC numbers linked to URLs pointing Web pages containing consumer product related information by scanning the UPC label on the consumer product or by entering the UPC number thereof into a data-entry screen displayed by the system in this mode;

25 a Manufacturer Website Search Mode, wherein the home page of a manufacturer's Web-site can be automatically accessed and displayed by scanning the UPC label on any consumer product of the manufacturer or by entering the UPC number thereof into a data-entry screen displayed by the system in this mode;

a Trademark-Directed Search Mode enabling consumers to use

trademarks and/or tradenames associated with consumer products to search for consumer-product related information registered within the system; and

5 a Product-Description Directed Search Mode enabling consumers to use product descriptors associated with particular consumer products to search for consumer-product related information registered within the system.

120. The system of claim 119, wherein when the system is in its UPN-Directed Information Menu Access Mode, a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's UPN 15 into the Internet browser manually or by bar code symbol scanning.

121. The system of claim 19, wherein when the system is in its Trademark-Directed Search Mode, a predesignated information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's trademark(s) and/or associated company name into the Internet 20 browser.

25

122. The system of claim 119, wherein, wherein when the system is in its Product-Description-Directed Search Mode, a predesignated

information resource (e.g. advertisement, product information, etc.) pertaining to any commercial product registered with the system can be automatically accessed from the Internet and displayed from the Internet browser by simply entering the registered product's product  
5 description into the Internet browser.

123. A consumer product information finding and serving system comprising:

a relational database realized on one or more data-synchronized  
10 IPD Servers for the purpose of registering product related information, namely: (i) information representative of commercial product descriptions, the trademarks used in connection therewith, the company names providing and/or promoting such products, and the corresponding URLs on the Internet specifying current Internet  
15 Web-site locations providing product-related information relating to such products.

124. The system of claim 123, wherein the URLs symbolically linked to each registered product in said IPD Servers thereof are categorized as relating primarily to types of information selected from the group consisting of Product Advertisements, Product Specifications, Product  
20 Updates, Product Distributors, Product Warranty/Servicing, and/or Product Incentives (e.g. rebates, discounts and/or coupons).

25 125. A consumer product information access terminal located at a point-of-sale (POS) station, wherein the bar code symbol reader integrated with the POS station can be used to read the UPC numbers on consumer products being offered for sale in the store in order to

access consumer product related information from hyper-linked Web-sites on the Internet, for display on a display screen located at the POS station.

5 126. The consumer product information access terminal of claim 125, wherein said display screen is viewable from various viewing positions by the sales clerk as well as consumer shoppers.

10 127. A consumer product information access terminal located installed within retail shopping environments comprising:

a bar code symbol reader for reading the UPC numbers on consumer products being offered for sale in the store, and

a touch-type display screen for displaying product-related information accessed from hyper-linked Web-sites on the Internet.

15 128. The consumer product information access terminal of claim 127, wherein the bar code symbol reader can be easily removed from its support stand to scan large consumer products that might difficult to present within the scanning field while the bar code symbol reader is supported above the LCD display panel.

25 129. The consumer product information access terminal of claim 127, wherein the laser scanning bar code symbol reader has a cordless interface with the terminal so that it may be moved about within a retail store in a portable manner to scan UPC (or EAN) labels and access consumer product related information from an Internet database.

130. A relational database for use within the product information finding and serving subsystem, wherein said relational database is initially "seeded" with: (i) the Manufacturer Base UPC Numbers based on the six digit UPC Manufacturer Identification Numbers (MIN) assigned to the manufacturers by the UCC and incorporated into the first six characters of each UPC number applied to the products thereof; and (ii) the URLs of the Web-site home pages of such manufacturers.

10 131. The relational database of claim 130, wherein said "seeded" relational database is then subsequently extended and refined with the participation of each registered manufacturer (and/or agents thereof) by adding to the "seeded" database (iii) the 12 digit UPC numbers assigned to each product sold thereby and the menu of URLs 15 symbolically linked to each such corresponding product.

132. A system for finding and serving consumer-product related information on the Internet, wherein consumer product related information links contained within a limited-version of the UPN/URL 20 Database of each registered manufacturer (or retailer) can accessed from the manufacturer's (or retailer's) company Website and served to consumers requesting such information by way of UPC (or EAN) number entry.

25 133. A system for finding and serving consumer-product related information on the Internet, wherein at the time of registering each manufacturer (or retailer) with the system, an Internet-based registration server automatically transmits a computer program to

the manufacturer's (or retailer's) computer system for use in constructing and maintaining a limited-version UPN/URL database related to the manufacturer's (or retailer's) products.

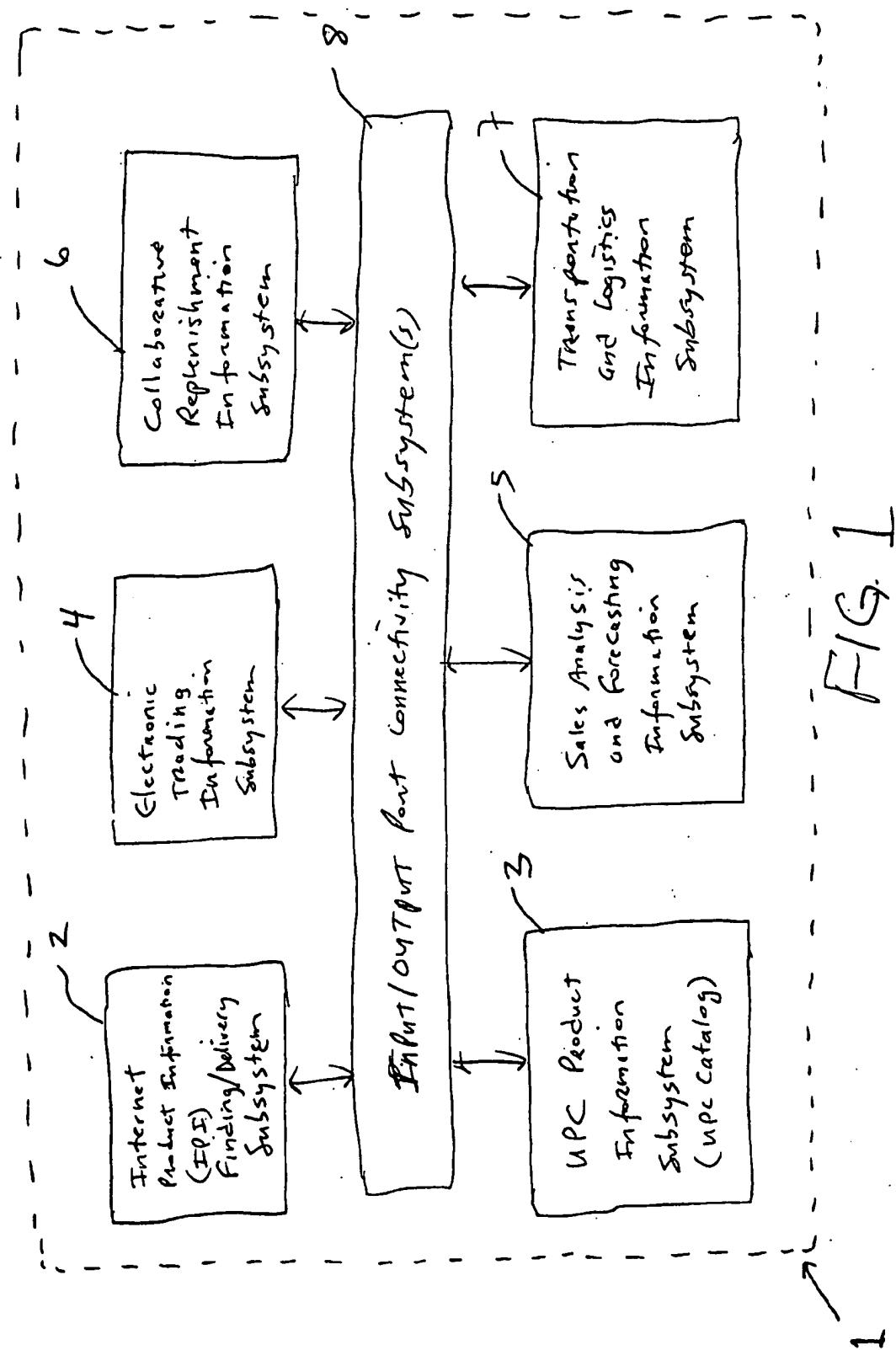


FIG. 1

1

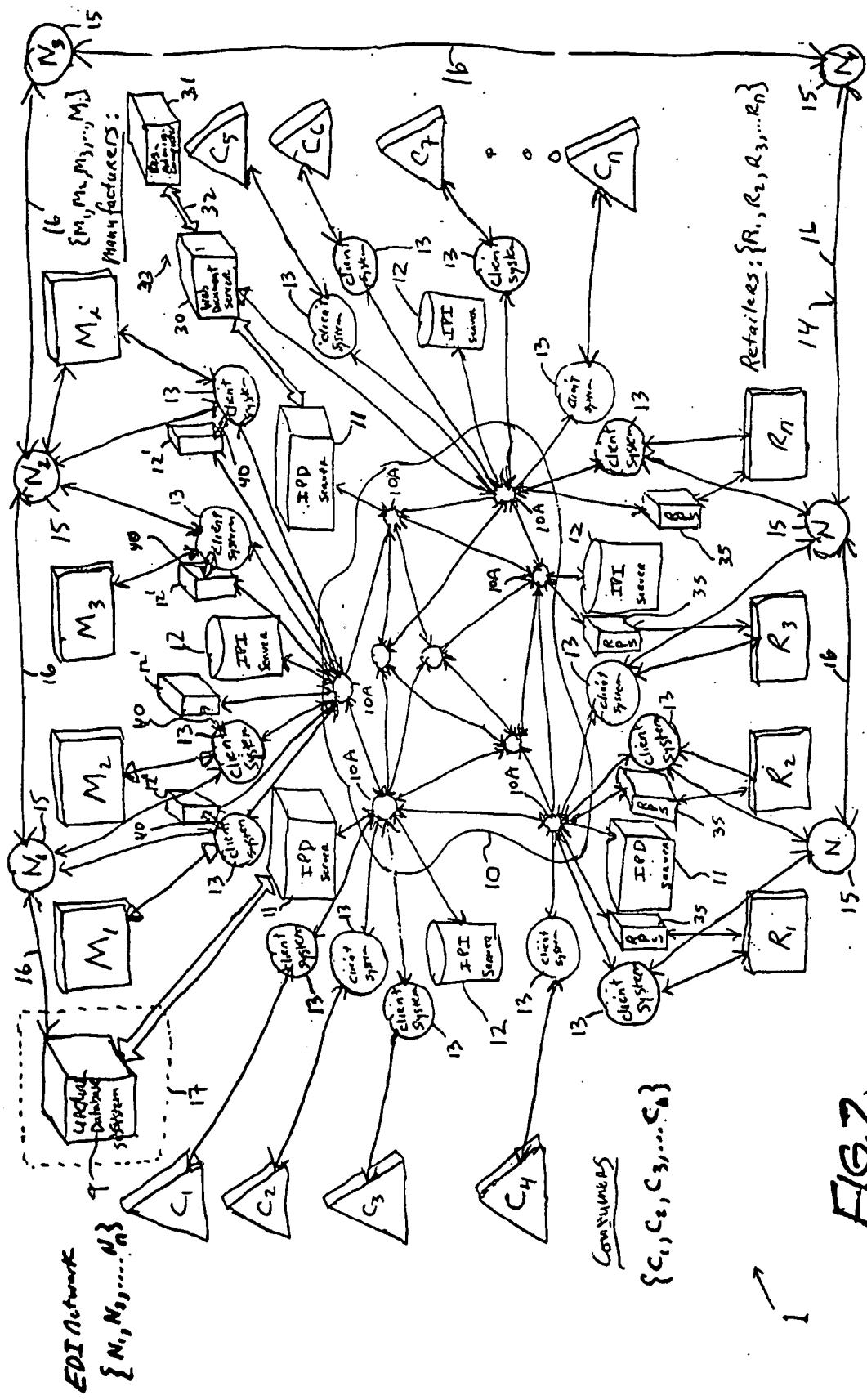


FIG. 2

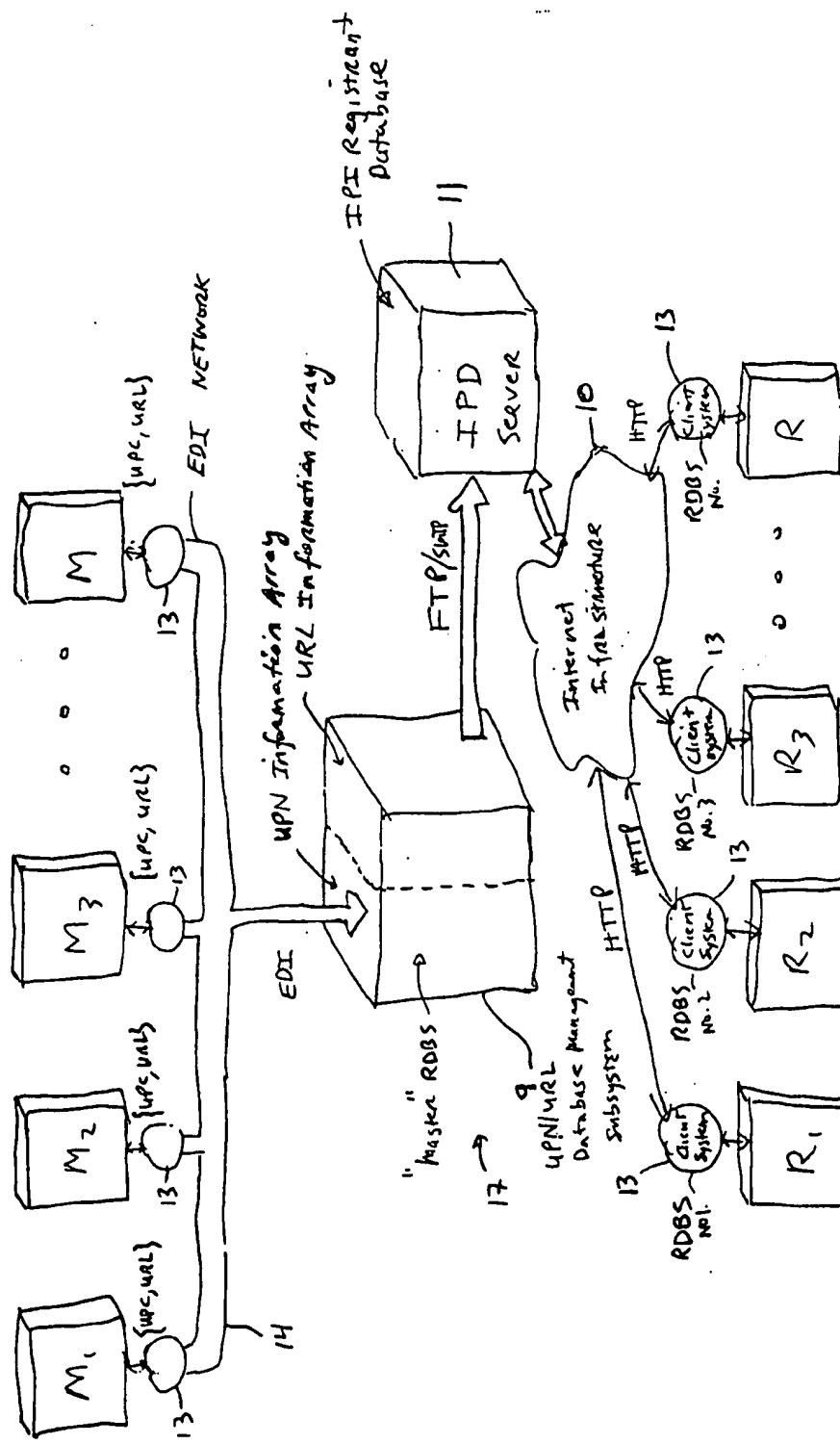


FIG 2A

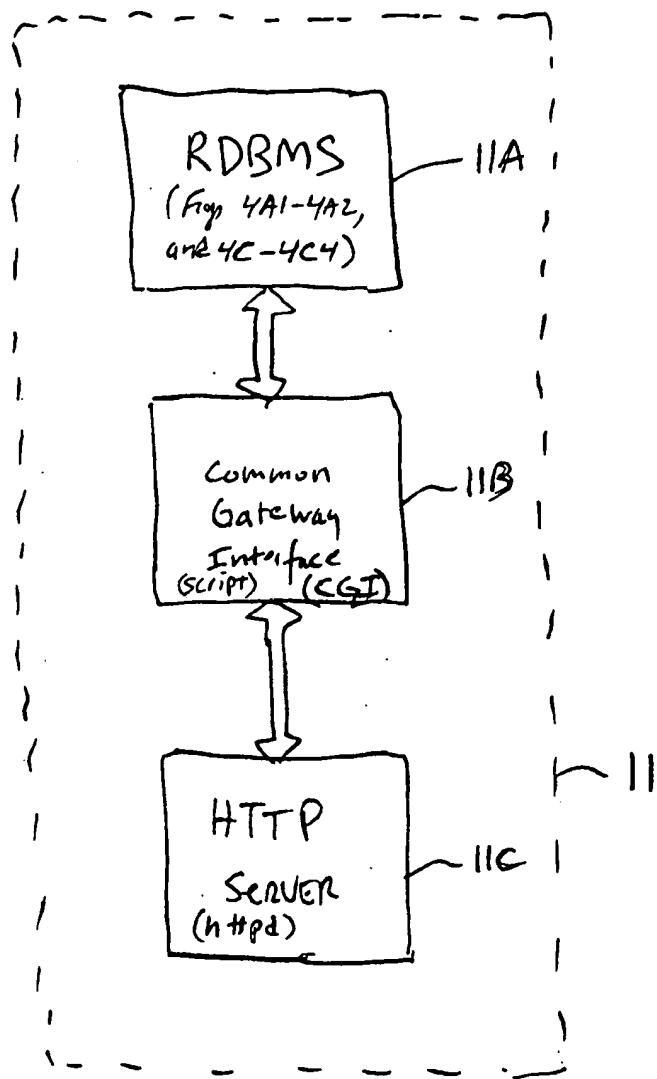


FIG. 2B

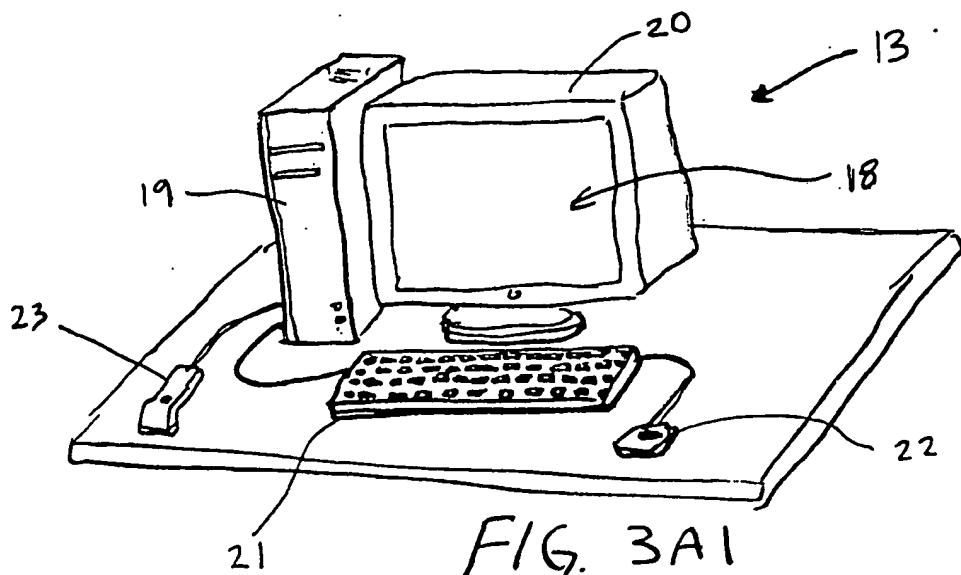


FIG. 3A1

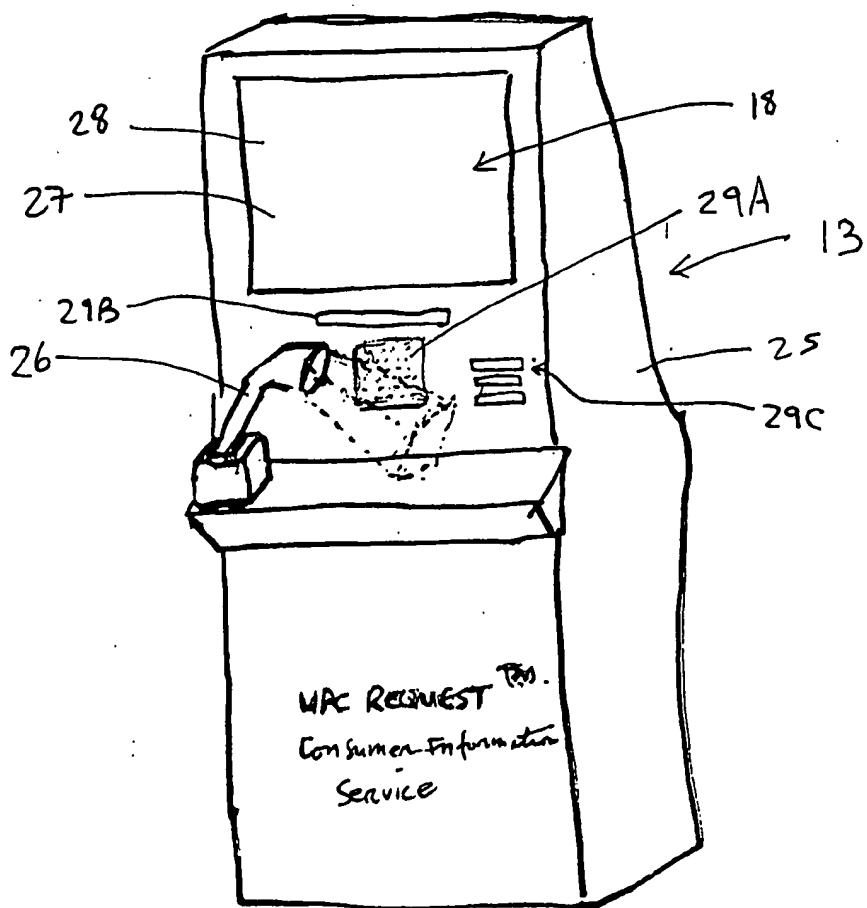
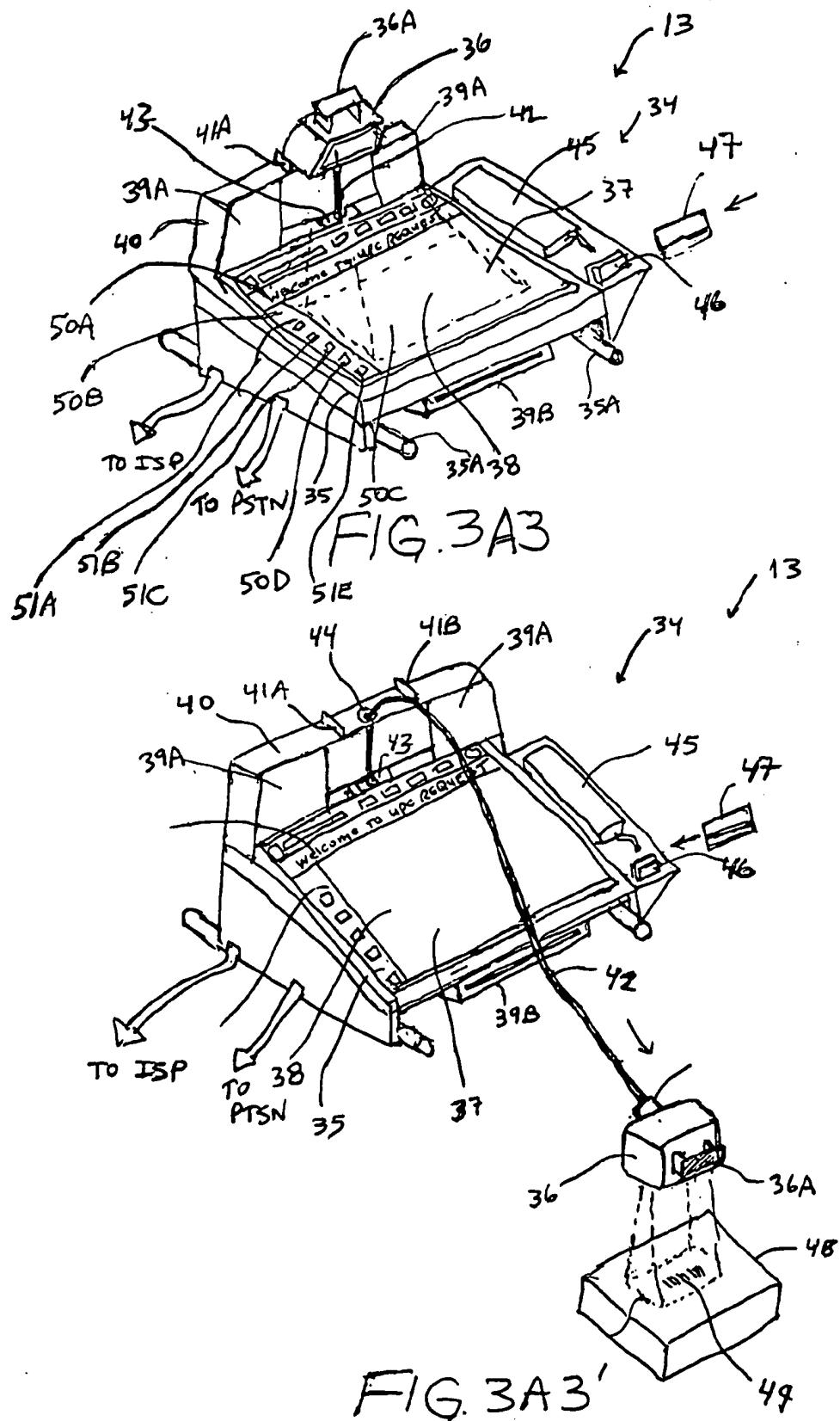
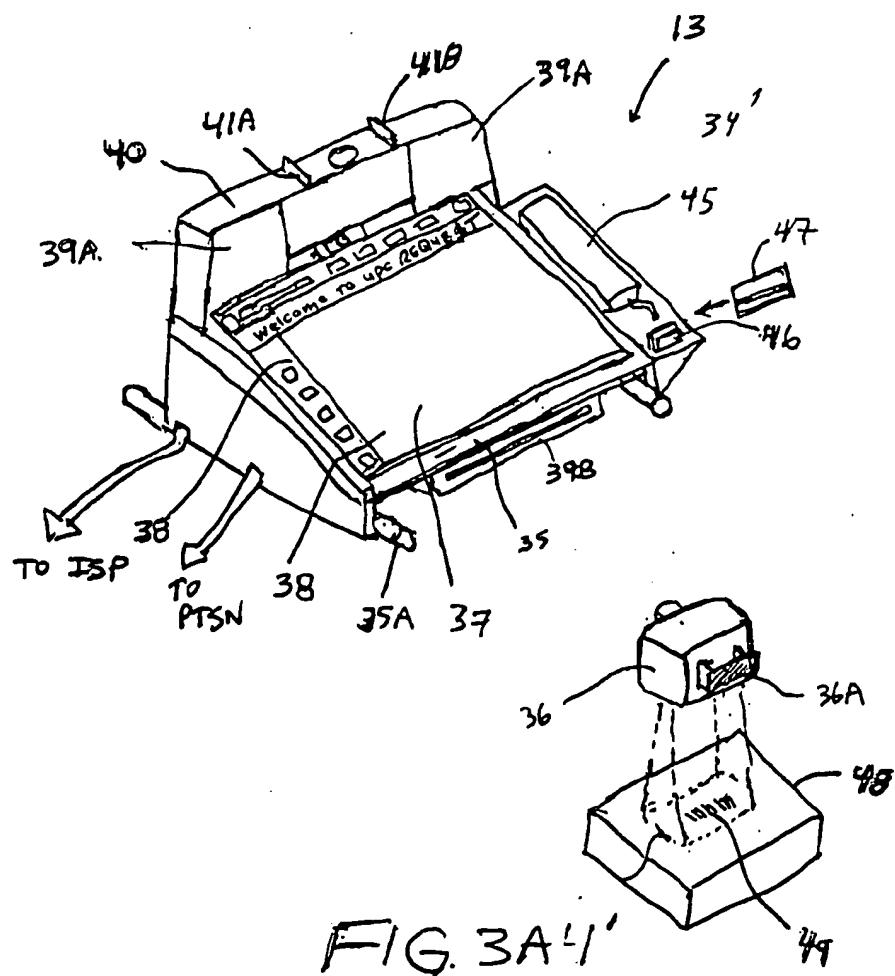
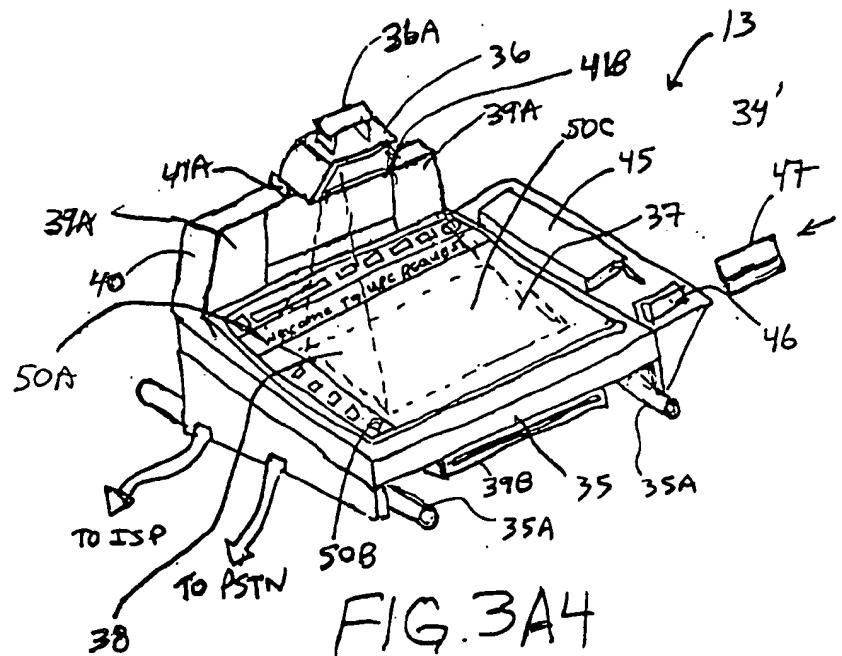


FIG. 3A2





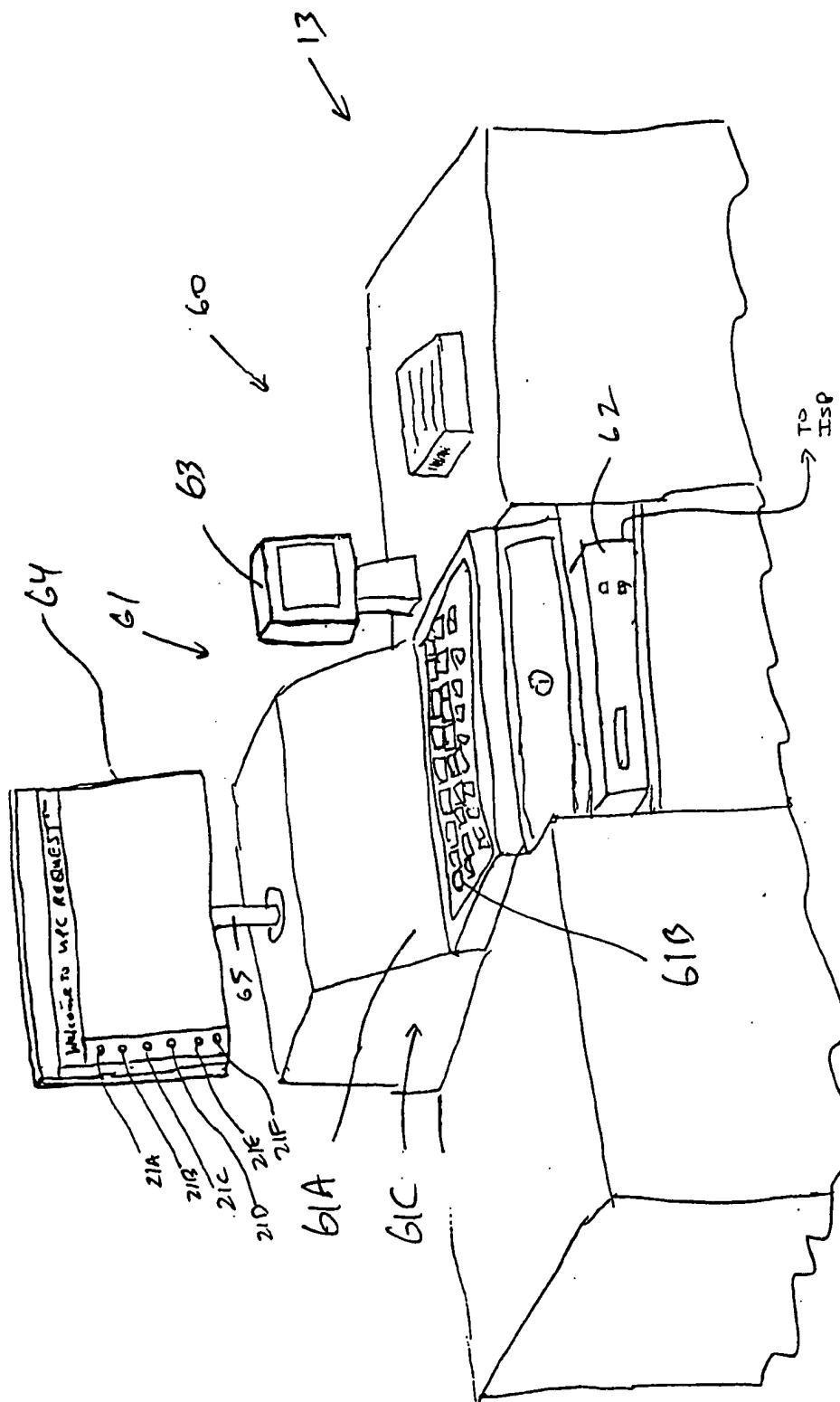


FIG 3A5

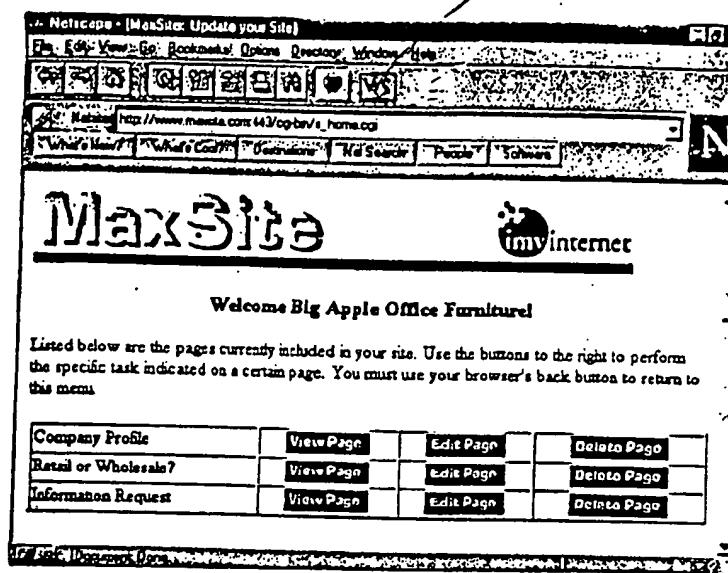


FIG. 3B

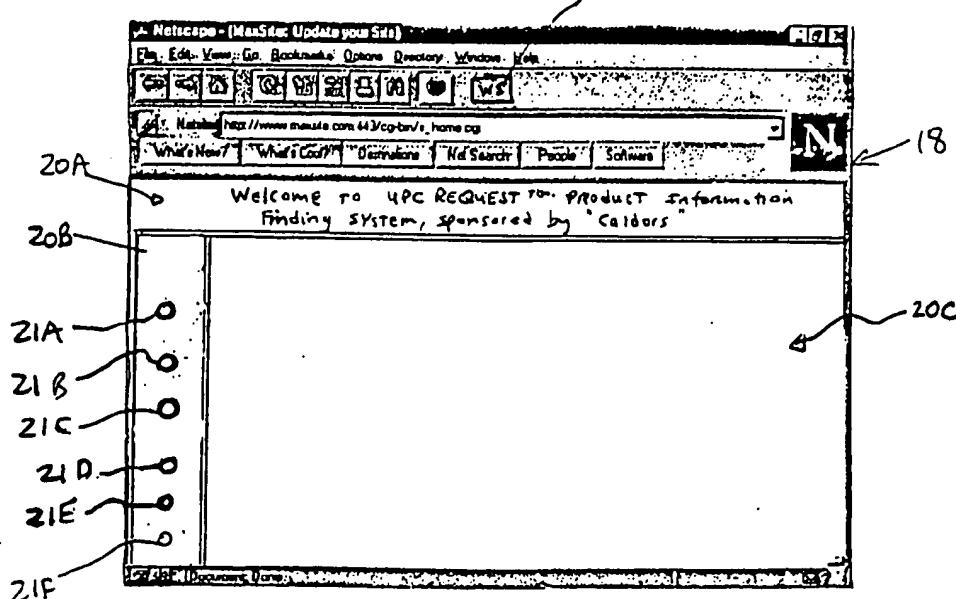


FIG. 3C

IP/SN	Registrant's Name and address	Product description	uniform locator (URL)	Trade/service marks	E-mail Address	Status
7/18908/1767410	Apple Computer, Inc. Cupertino, Calif.	Power Mac Power/120 External monitor	http://www.----/	Power mac.		
0/373/10016	Packer of Gamble	toothpaste	http://www.----/	crest		
3/12547/68401/0	Wanger Welcome	acid reducer	http://www.----/	Zontac, Zontac 7-5		
0/00005/13643/4	Kodak, Inc.	film processing	http://www.----/	Kodak		
0/27242/81057/9	Sony, Inc.	Personal Computer	http://www.Sony.com/pc	Sony		
					..	
					..	
					..	

Information structure of relational  
Data base realized as a  
EIS directory server

FIG 4A1

11 Subfield structure of user information Field of TPSID Database

FIG. 4A2

I/P/S N	Registrant's Name and Address	Product Description	Trade/Service Marks	E-mail Address	Status
7/050859/3745017	Netscape Communication Corp.	Internet Navigator	Netscape, Navigator		
0/30000/0102014	Quaker Oats	Oatmeal	Quaker		
0/416/3901	Coca Cola, Inc	Cola Soda	Coca-Cola, Coke		
0/7599/24245/2	Warner Bros.	Pat Metheny	Geffen	Andi-CD	

Information structure of relational Data base realized above *EIS Primary Server*

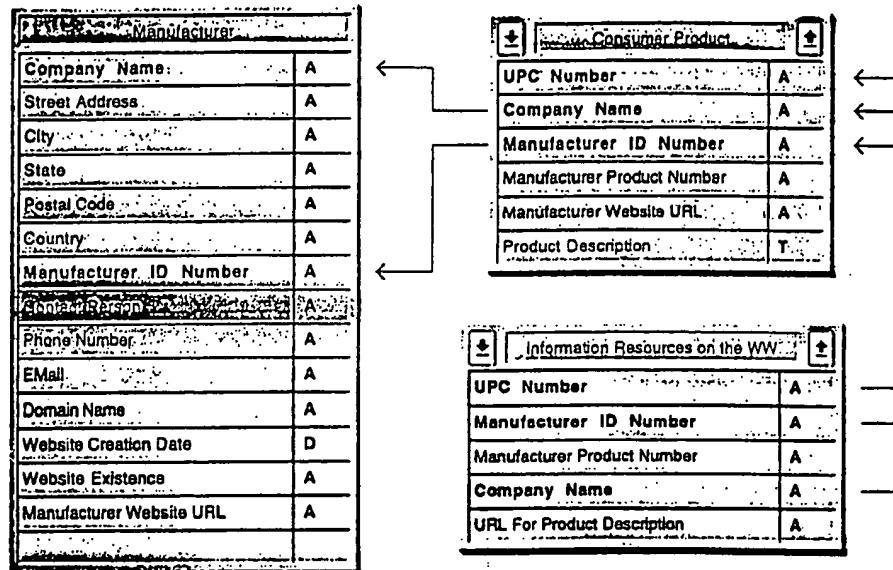


FIG. 4C

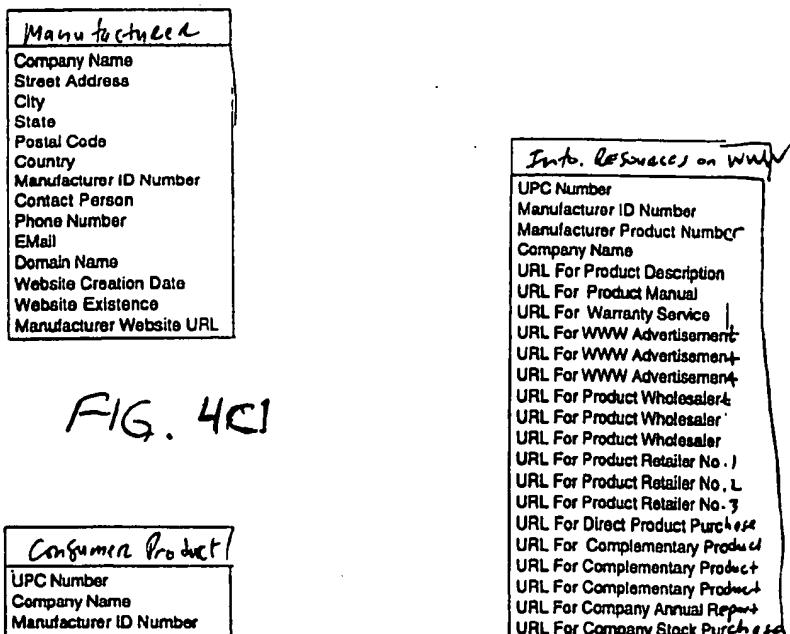


FIG. 4C1

**Consumer Product**

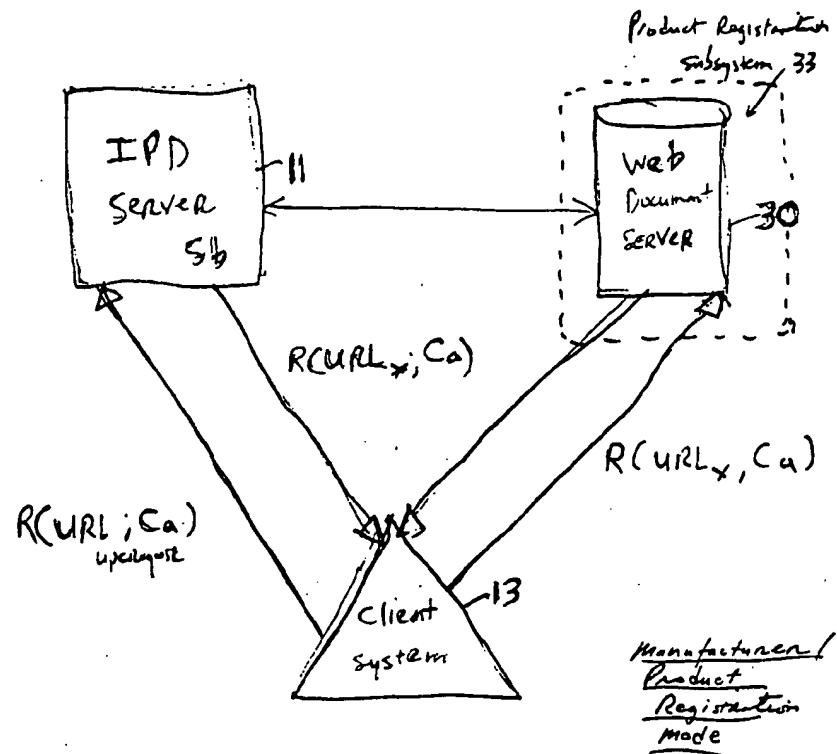
UPC Number
Company Name
Manufacturer ID Number
Manufacturer Product Number
Manufacturer Website URL
Product Description
Primary Trademark
Secondary Trademark
Package Type
UPC Symbol Type
Website Marking on Package
800 Consumer Phone Number

FIG. 4C3

FIG. 4C2

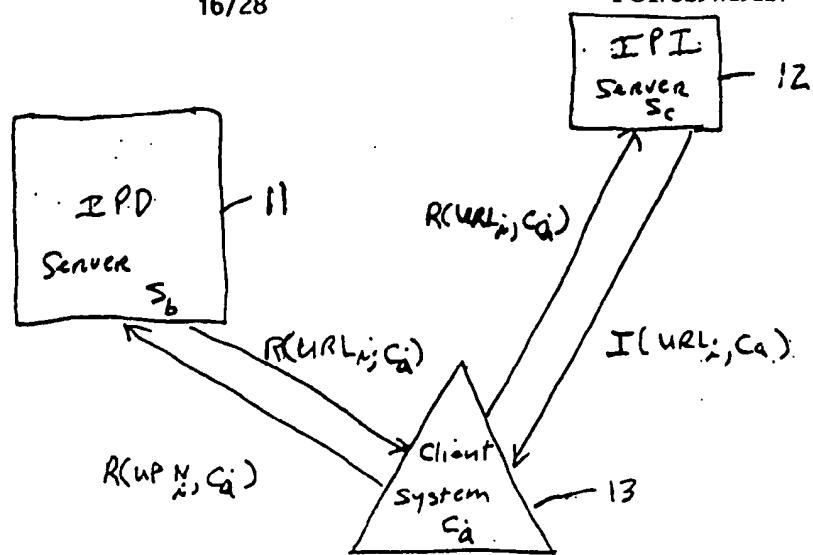
Retailer
Company Name
Street Address
City
State
Postal Code
Country
Manufacturer ID Number
Contact Person
Phone Number
EMail
Domain Name
Website Creation Date
Website Existence
Manufacturer Website URL
Manufacturer No. 1
Manufacturer No. 2
Manufacturer No. 3
Manufacturer No. 4
Manufacturer No. 5
Manufacturer No. 6
Manufacturer No. 7
Manufacturer No. 8
Manufacturer No. 9
Manufacturer No. 10
Manufacturer No. N

FIG. 4D



Manufacturer /  
Product  
Registration  
Mode

FIG. 5A



Manufacturer  
website SEARCH  
mode

FIG. 5B

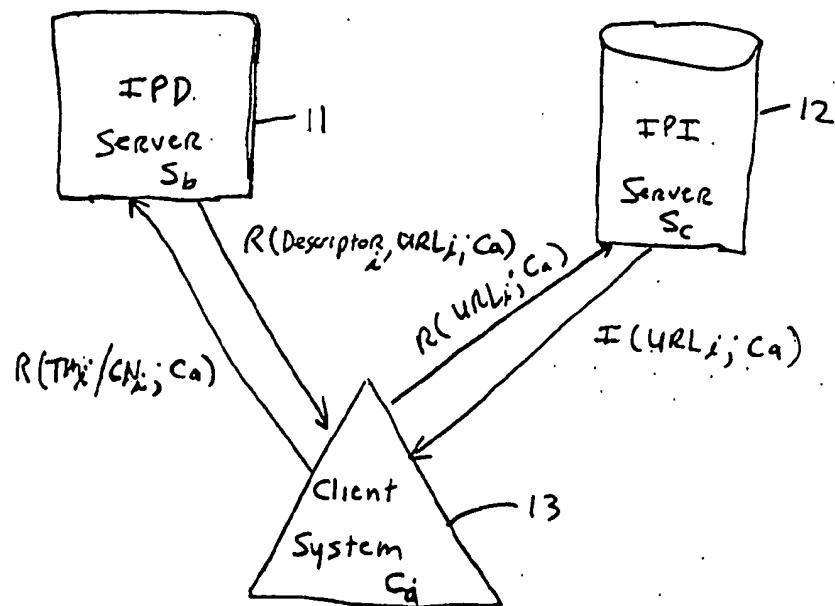


FIG. 5D

TRADE-MARK  
Directed  
SEARCH Mode

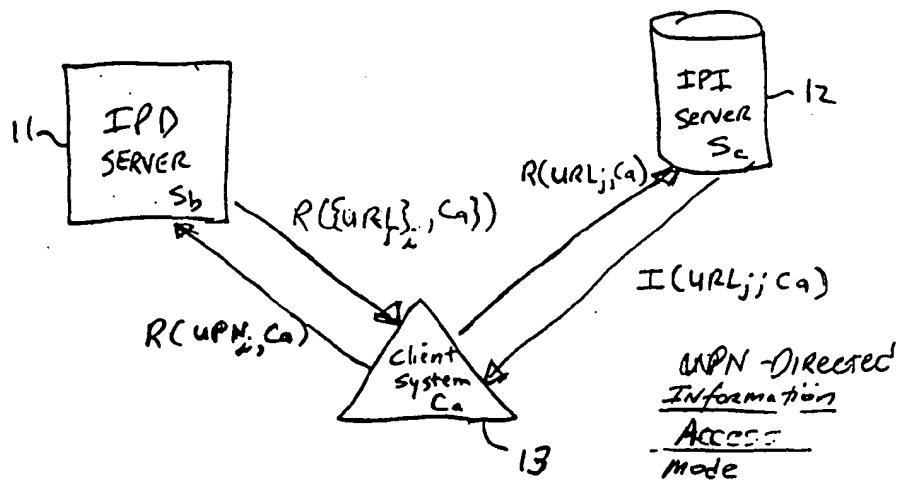


FIG. 5C

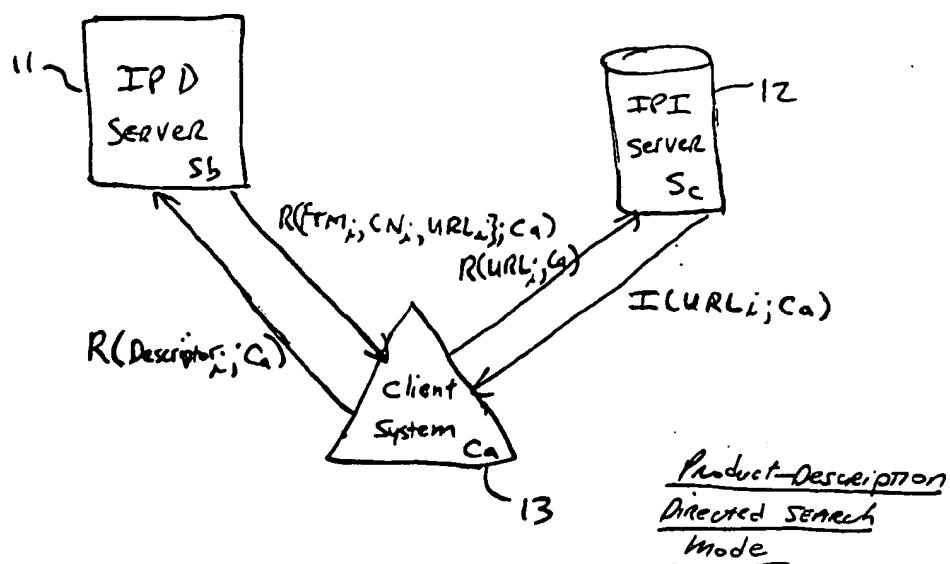


FIG. 5E

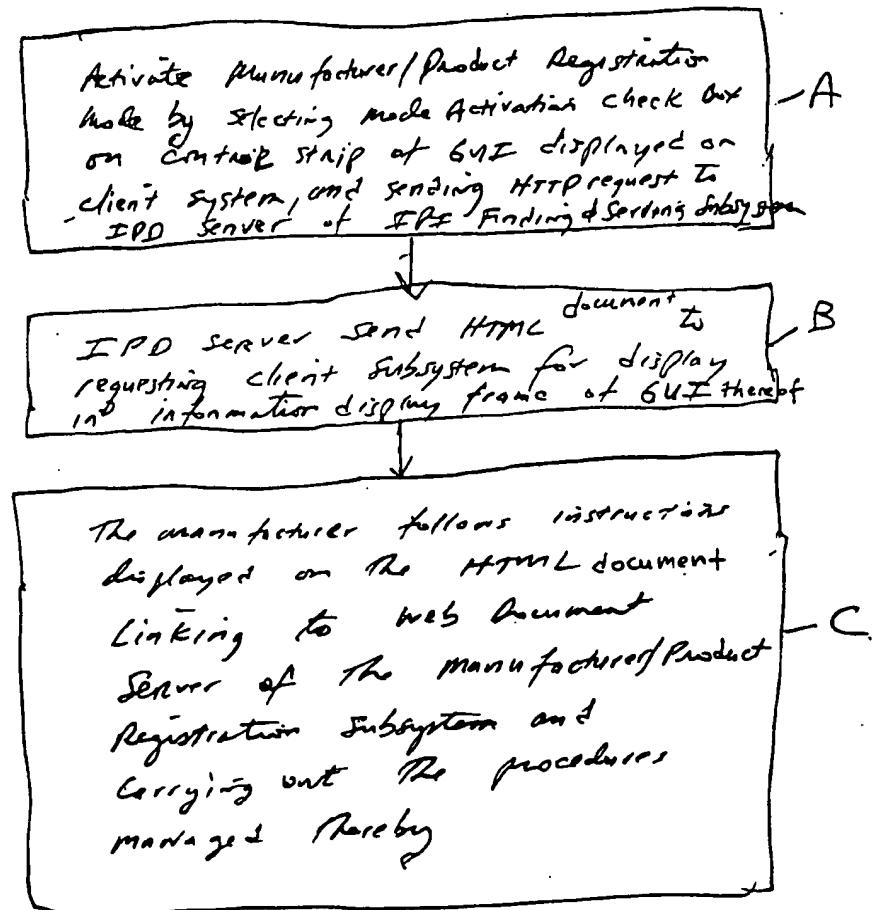
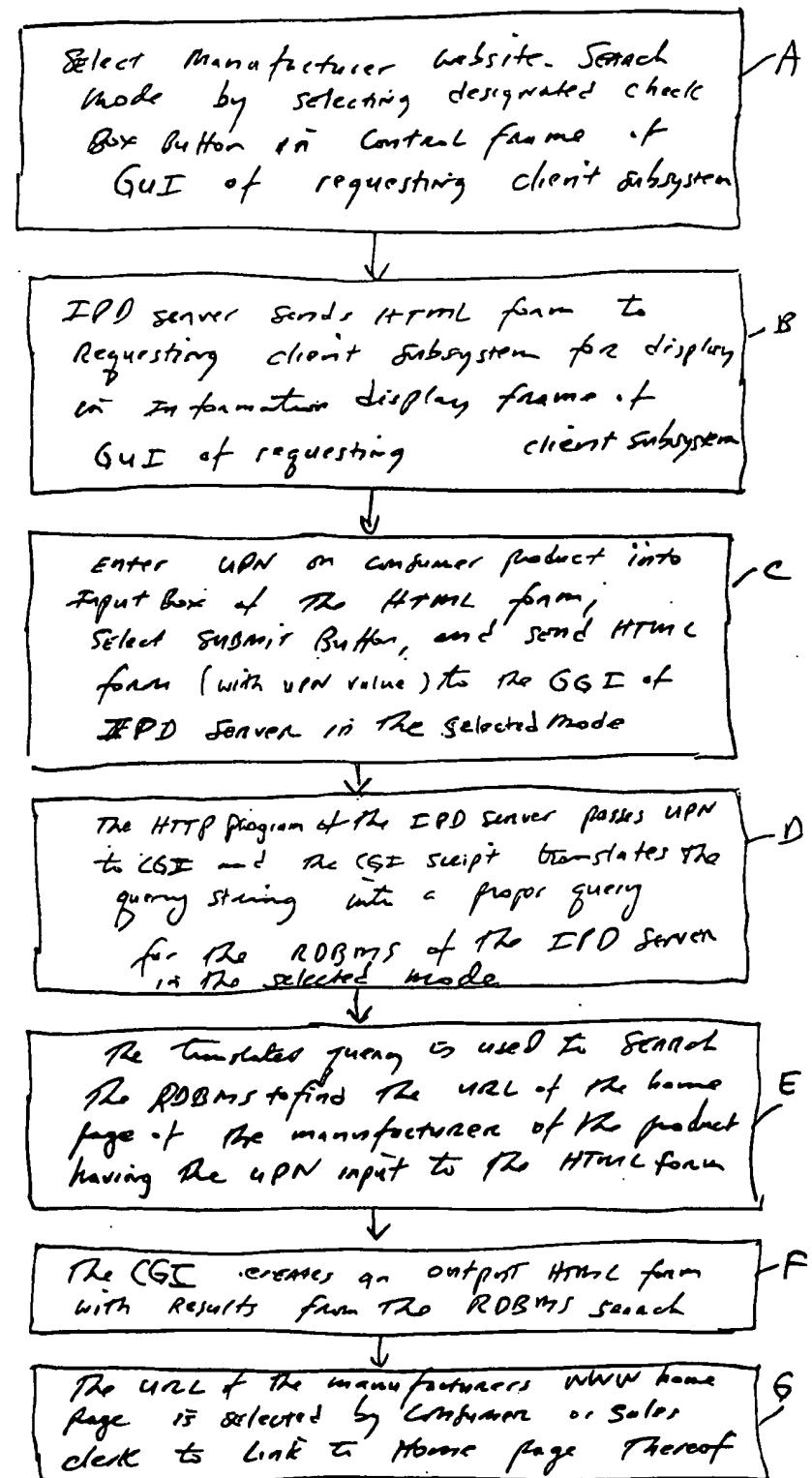


FIG. 6A

Manufacturer  
Product Registration  
mode



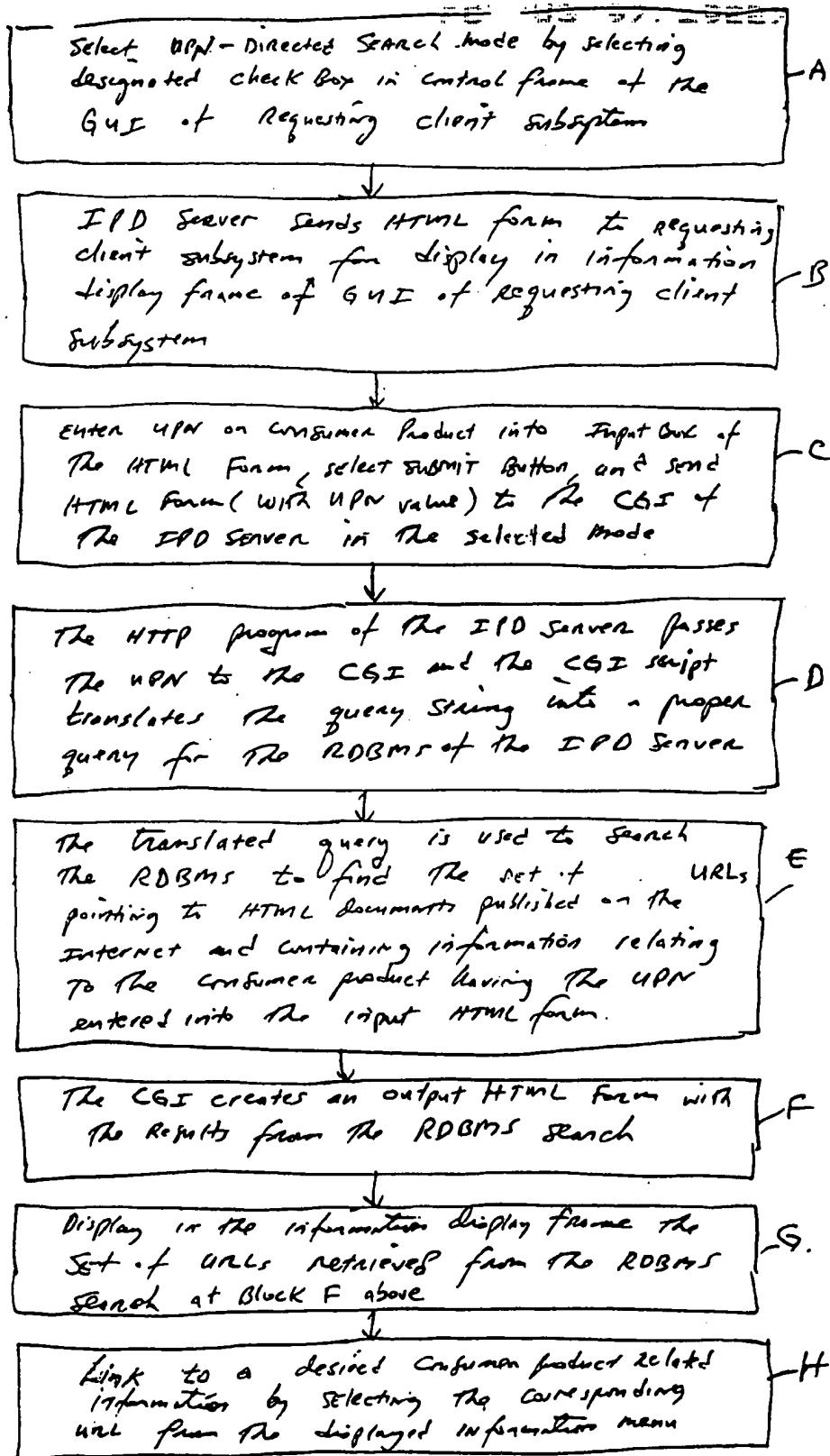
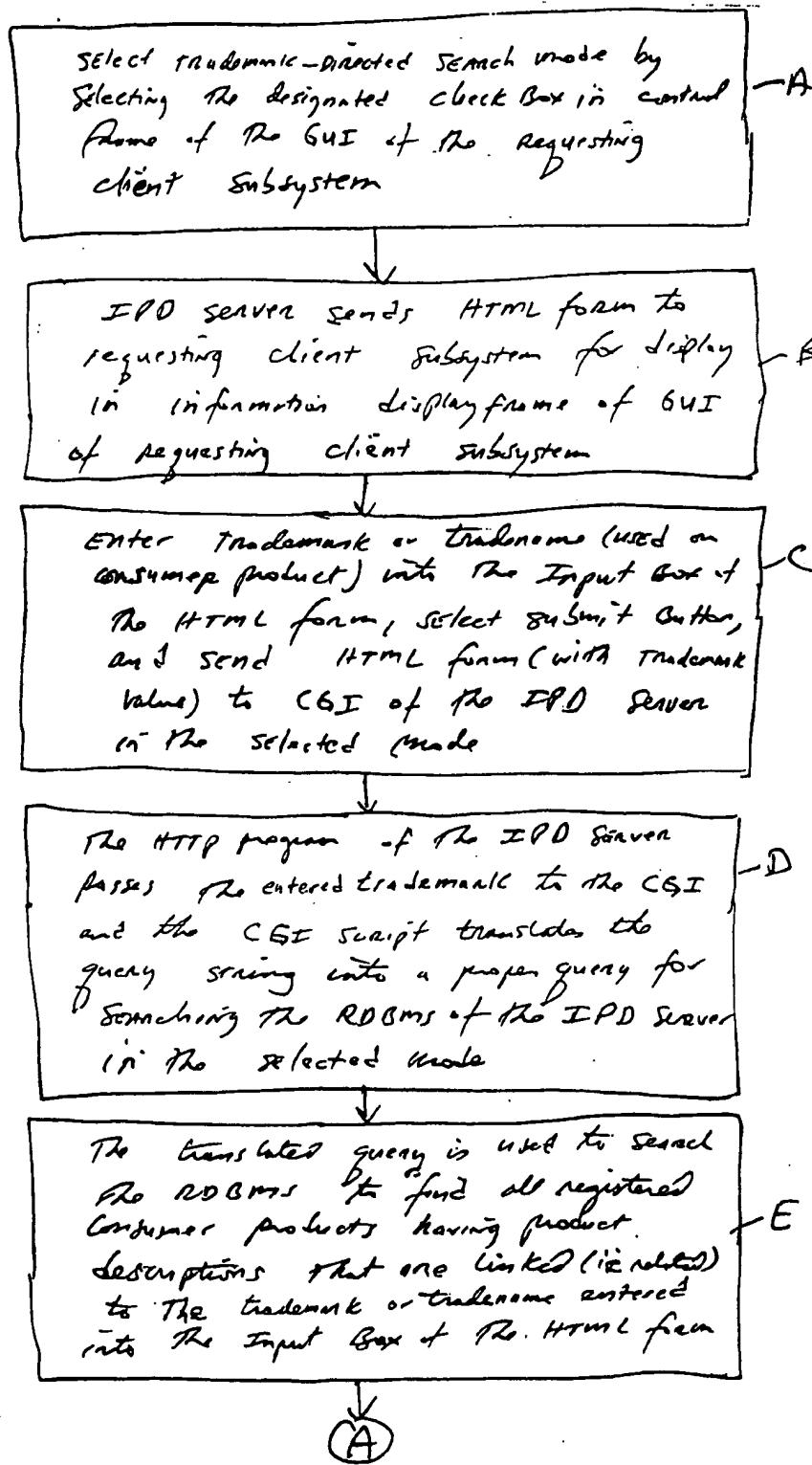
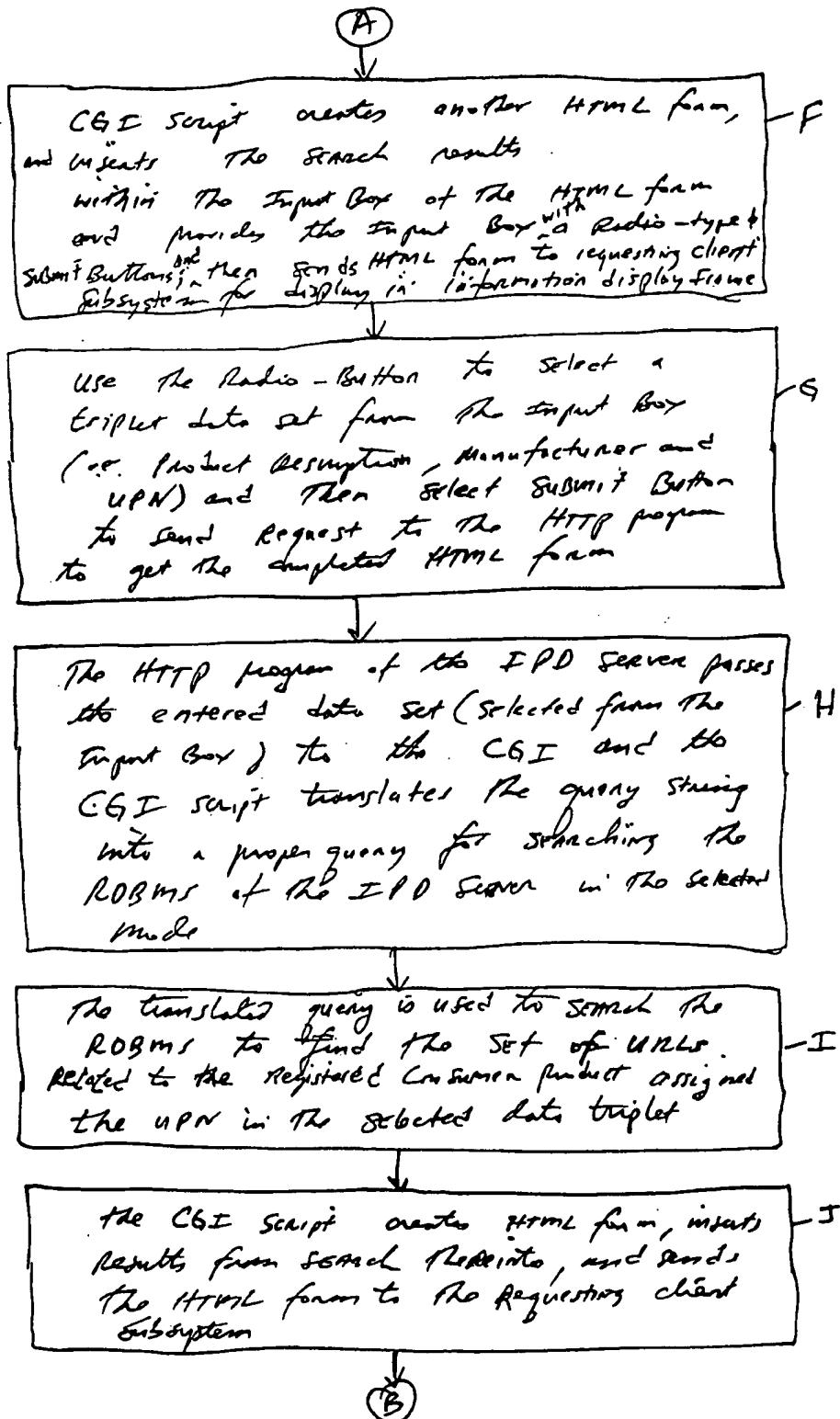
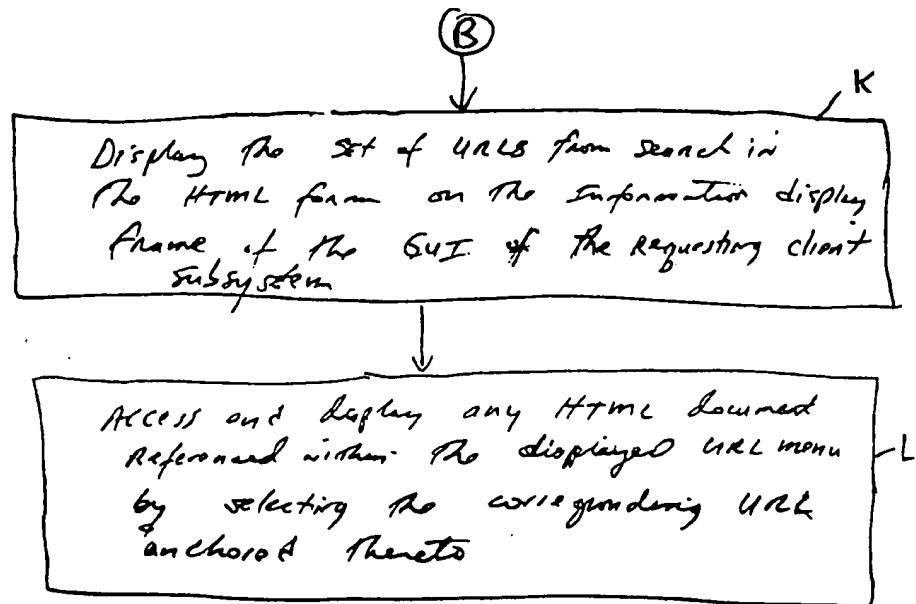


FIG. 6C UPN-Directed Information Access Mode

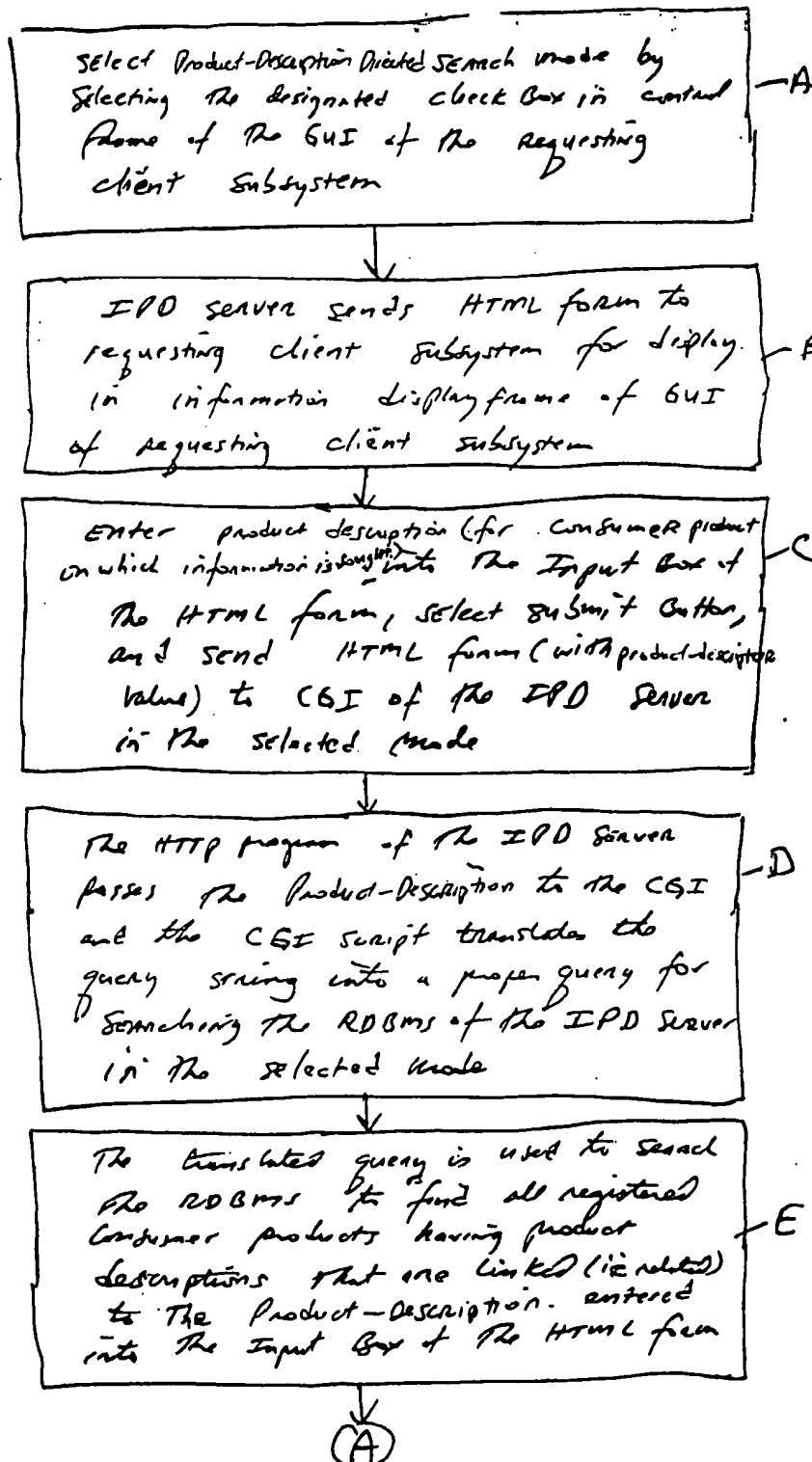






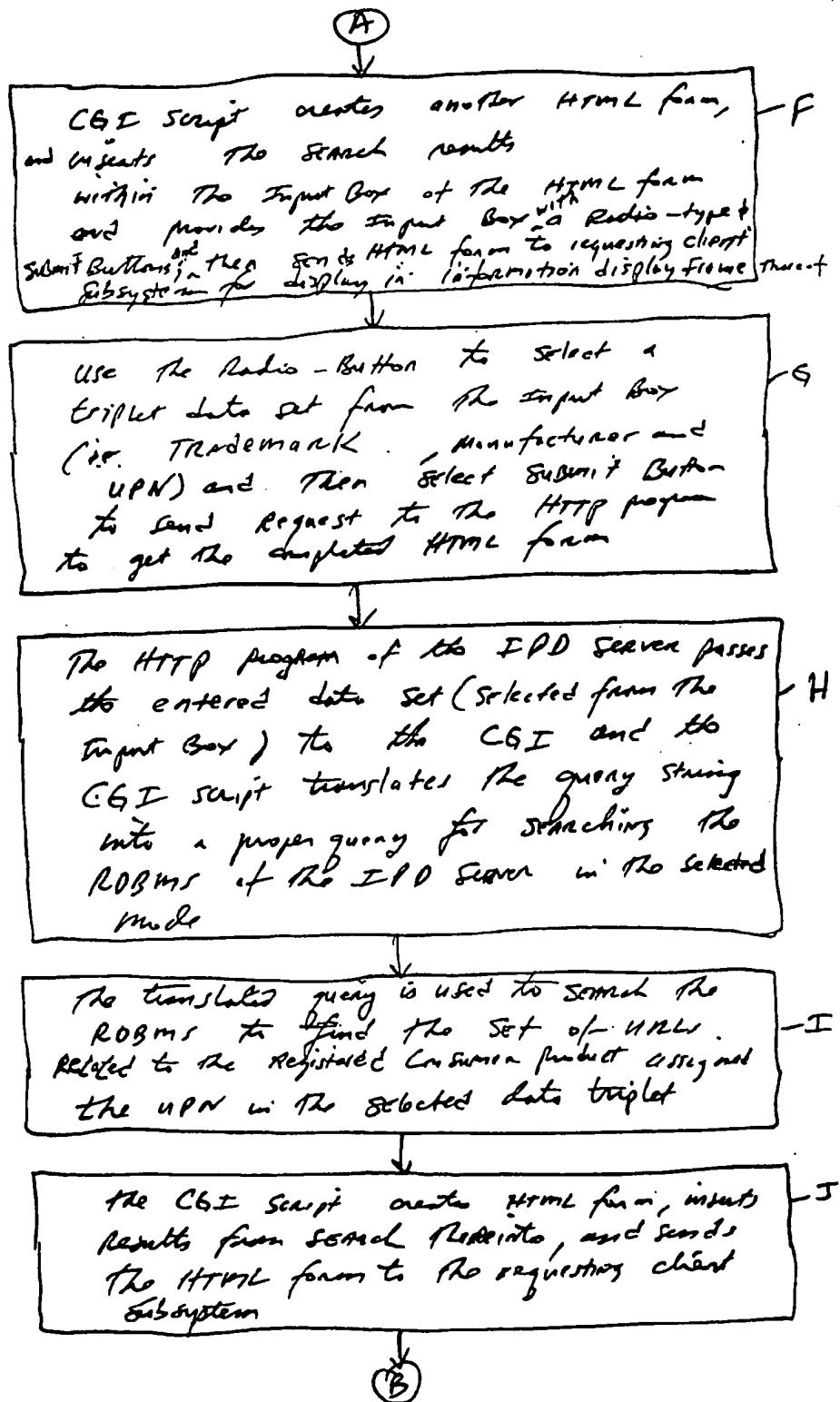
Trademark-Directed  
SEARCH MODE

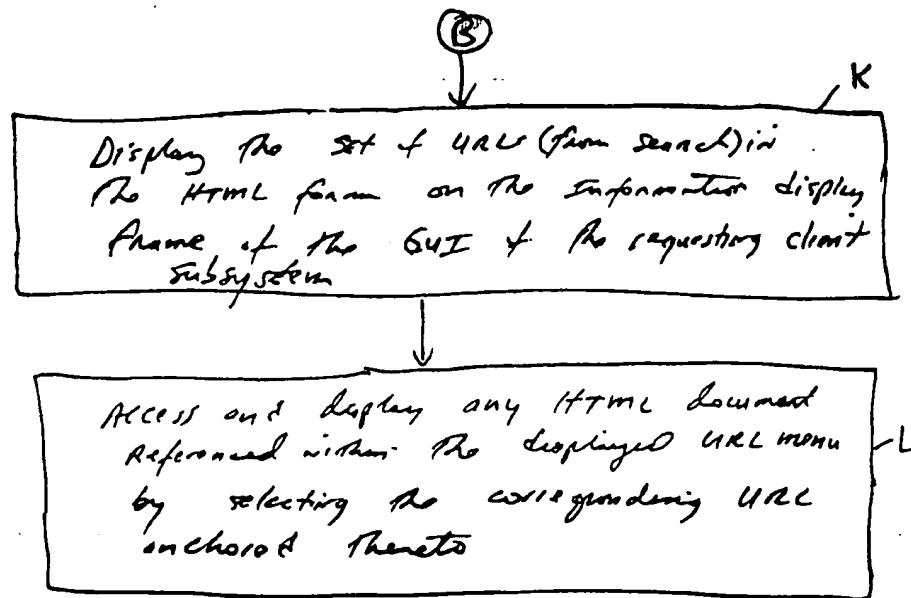
FIG 603



Product-Description  
Directed Search  
Mode

FIG. 6 E1





Product-Description  
Search mode

FIG 6E3

### UPC REQUEST™ CONSUMER PRODUCT INFORMATION FINDING SYSTEM

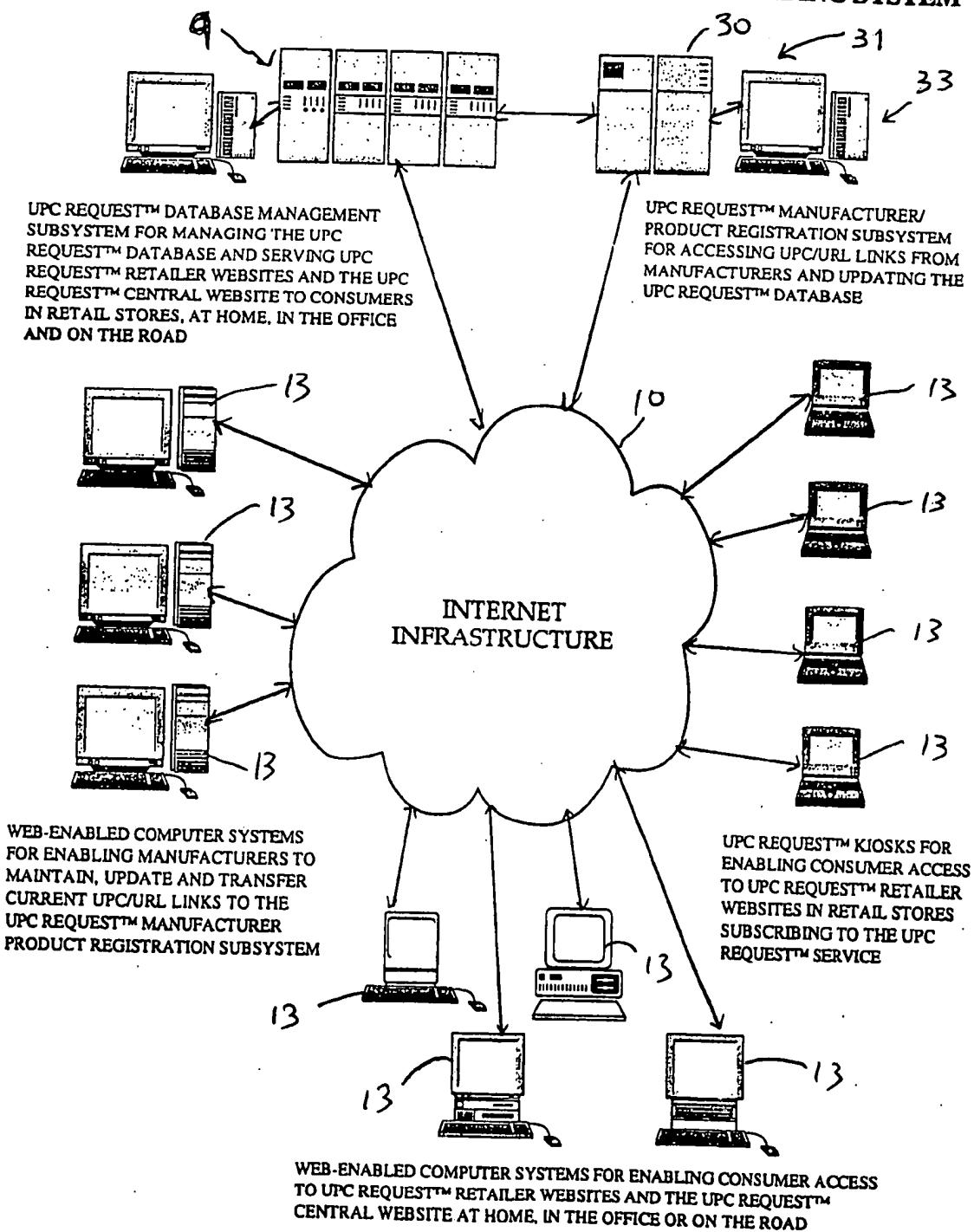


FIG. 7

WEBSITE PORTFOLIO  
SUPPORTED AND MANAGED  
BY  
THE UPC REQUEST™ DATABASE  
MANAGEMENT SUBSYSTEM

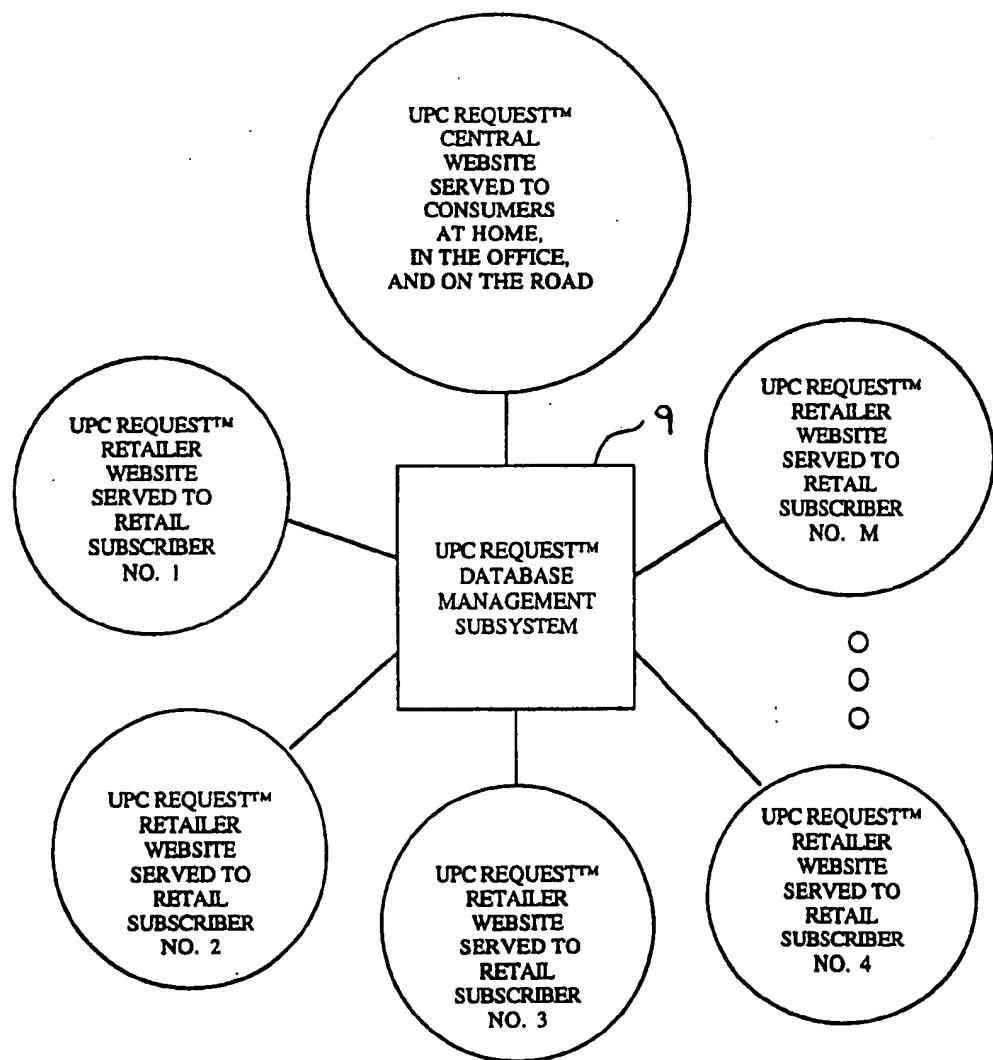


FIG. 8

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/19227

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :G06P 17/60

US CL :705/26

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 705/1, 14, 26, 27; 395/200.47, 200.49; 230/375, 376

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4,654,482 A (DEANGELIS) 31 MARCH 1987, see col. 6, lines 54-63	72
X	US 5,483,052 A (SMITH, III ET AL.) 09 JANUARY 1996, see col. 1	72
X,P	US 5,592,378 A (CAMERON ET AL.) 07 JANUARY 1997, see Fig. 2, cols. 2-3	114-116
A,P	US 5,612,527 A (OVADIA) 18 MARCH 1997, see Fig. 2, col. 5	72
X,E	US 5,715,444 A (DANISH ET AL.) 03 FEBRUARY 1998, see cols. 1-3, 5-19	114-116

Further documents are listed in the continuation of Box C.  See patent family annex.

* Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"		document defining the general state of the art which is not considered to be of particular relevance
"B"		earlier document published on or after the international filing date
"L"		document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O"		document referring to an oral disclosure, use, exhibition or other means
"P"		document published prior to the international filing date but later than the priority date claimed
"X"		document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y"		document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"A"		document member of the same patent family

Date of the actual completion of the international search

27 FEBRUARY 1998

Date of mailing of the international search report

20 MAR 1998

Name and mailing address of the ISA/US  
Commissioner of Patents and Trademarks  
Box PCT  
Washington, D.C. 20231  
Facsimile No. (703) 305-3230Authorized officer  
STEPHEN R. TKACS  
Telephone No. (703) 305-3800

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/19227

## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,L	US 5,719,828 A (HAAS ET AL.) 17 FEBRUARY 1998, see Fig. 9, cols. 10-11	70-71

**INTERNATIONAL SEARCH REPORT**

International application No.  
PCT/US97/19227

**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.: because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.: because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3.  Claims Nos.: because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US97/19227

## B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

### APS, DIALOG:

barcode, upc, product code, product number, url, resource locator, web, internet, browser, trademark, brochure, ticket, kiosk

## BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claims 1-69, 73-113, and 117-193, drawn to methods and systems for searching the Internet for product information based on universal product number or trademark information.

Group II, claims 70-72, drawn to printed matter bearing a universal product number.

Group III, claims 114-116, drawn to management subsystem comprising a computer-product directory.

The inventions listed as Groups I and II do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The invention of Group I is concerned with searching the Internet for product information based on a universal product number, but does not require the printed matter of the invention of Group II. The invention of Group II requires only the printed matter with a number printed thereon and does not require the searching methods and systems defined by the claims in Group I.

The inventions listed as Groups I and III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The invention of Group I is concerned with searching the Internet for product information based on a universal product number, but does not require the management subsystem and consumer-product directory of the invention of Group III. The invention of Group III requires only the management subsystem and consumer-product directory and does not require the searching methods and systems defined by the claims in Group I.

The inventions listed as Groups II and III do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The invention of Group II requires only the printed matter with a number printed thereon and does not require the management subsystem and consumer-product directory of the invention of Group III. The invention of Group III requires only the management subsystem and consumer-product directory and does not require the printed matter of Group II.